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1899

[N° 11*a*—1899.]

To His Excellency the Right Honourable SIR GILBERT JOHN ELLIOT MURRAY-KYNNYNMOND, EARL OF MINTO, *Governor General of Canada, etc., etc.*

MAY IT PLEASE YOUR EXCELLENCY :

I have the honour to submit herewith, for the information of Your Excellency and the Legislature of Canada, the Thirty-First Annual Report of the Department of Marine and Fisheries, Fisheries Branch.

I have the honour to be,

Your Excellency's most obedient servant,

LOUIS HENRY DAVIES,
Minister of Marine and Fisheries.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, 31st December, 1898.

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31st ANNUAL REPORT

OF THE

DEPUTY MINISTER OF MARINE AND FISHERIES

FOR THE YEAR 1898.

To the Honourable
Sir Louis H. Davies, K.C.M.G., &c.,
Minister of Marine and Fisheries.

Sir,—I have the honour to submit the annual report on the work of the Fisheries Branch of the Department of Marine and Fisheries for the year ending Dec. 31, 1898; and as in prior reports, the statistics given are for the preceding year.

Three special reports are appended by Professor Prince, Commissioner of Fisheries, treating of the following important fishery subjects, viz: "Fluctuations in the Abundance of Fish," "The Food of the Sturgeon," and "The Salmon of the Dominion." Among the appendices following these reports is an important and comprehensive one on "Oyster Fisheries of Canada" with descriptions of Oyster Culture in various countries and hints on farming of oysters by Mr. Kemp, the Department's Oyster Expert.

Included in this annual report are the usual statements of expenditure, receipts, Fishing Bounties, and statistics of the capital, men, quantity and value of the year involved in the Canadian fisheries. Following the tables, the value of the fisheries in the aggregate, and by provinces, some important details are given in regard to the growth and the fluctuations exhibited by the various branches of the industry.

A comparative tabulated review of the quantities and values of the Fisheries from 1869 to 1897 forms an important feature in this report, and also brief *résumés* of the work of Fish Culture, Oyster Culture, Fisheries Protection Service, Fisheries Intelligence Bureau, are given, as well as a review of the fisheries in the various provinces for 1898 based upon preliminary reports of the various Inspectors.

The appendices as usual furnish the full particulars of the subjects just referred to.

EXPENDITURE AND REVENUE.

The details of the total expenditure for the different fisheries services during the last fiscal year, amounting to $442,499, form the first appendix of this report. This amount comprises the fisheries proper, $90,332; fish-culture, $28,002; fisheries protection service, $106,316;* miscellaneous expenditure, $59,627; besides the $157,504 distributed as fishing bounties.

---

*Note—Error on page 6, third last line "Curlew $9,864" should not be there as Customs did not pa- said amount. The grand total expenditure is therefore increased by the said sum of $9,864.

The total amount received during the same period as revenue from fishery licenses, fines, etc., in the different provinces of Canada is given at $113,103. This sum also includes the *modus vivendi* licenses granted to United States fishing vessels ($6,923)

This appendix also contains a recapitulation statement of all fisheries expenditure and revenue for the last thirteen years.

FISHING BOUNTIES.

For the year 1897, the deep-sea fishermen of the Maritime Provinces received the sum of $157,504 as fishing bounties on their respective catch. Of this amount, $60,939 was divided amongst the owners of 790 vessels and their crews, and $96,565 was distributed to 23,612 boat fishermen using 13,939 boats.

All the claimants for bounty comprised 14,847 claims, 118 of which were refused. The rate of payment last year was, for vessels $1 per ton and $6 each to the crew, to boat owners $1 and $3.50 per fisherman.

Since its inception (1882) over two and a half million dollars have been paid to our Canadian fishermen to encourage them in the better development of our sea fisheries. Of this large sum Nova Scotia received more than half, $1,606,239, Quebec $494,396, New Brunswick $250,352, and Prince Edward Island $170,921.

A complete list of all vessels having received fishing bounty will be found in Appendix No. 2 p.p. 2C etc.

GENERAL STATISTICS OF FISHERIES.

EXTENT OF COAST.

The fisheries of Canada are the most extensive in the world, comprising an immense sea-coast line, besides innumerable lakes and rivers. The eastern sea-coast of the Maritime Provinces from the Bay of Fundy to the Straits of Belle Isle covers a distance of 5,600 miles, and that of British Columbia is given at 7,180 miles, that is more than double that of Great Britain and Ireland.

While the salt water inshore area, not including minor indentations, covers more than 1,500 square miles, the fresh water area of that part of the great lakes belonging to Canada is computed at 72,700 square miles, not including the numerous lakes of Manitoba and the Territories all stocked with excellent species of food fishes.

CAPITAL INVESTED AND MEN ENGAGED IN THE FISHERIES OF CANADA.

The following tables show that no less than 78,959 men were engaged, during 1897, in our fishing industry using boats, nets and other fishing implements aggregating a capital of $9,370,794. Nearly 1,200 schooners and tugs manned by 8,879 sailors found employment in this vast industry, besides the 70,000 fishermen using 37,693 boats, and 5,602,460 fathoms of nets, &c.

The lobster plant alone for that year is valued at $1,349,000. This amount comprises 738 canneries with its 1,156,300 traps. This branch of the fishing industry gave employment to 15,165 persons.

RECAPITULATION

SHOWING the Number and Value of Fishing Vessels, Boats, Nets, etc., and the Number of Fishermen in Canada, 1897.

Provinces.	FISHERMEN IN		VESSELS.			BOATS.		GILL NETS AND SEINES.		Value of Pound-nets, Trap-nets, Trawls, Weirs, etc.	Value of Lobster Plant.	Approximate Value of Freezers, Fish and Smoke houses and other fixtures not itemized.	Total Value.
	Vessels.	Boats.	No.	Tonnage.	Value.	Number.	Value.	Fathoms.	Value.				
Nova Scotia...........	5,514	19,859	545	24,677	819,149	15,468	319,723	2,370,093	633,109	218,988	663,746	494,459	3,149,174
New Brunswick.......	1,085	10,486	293	3,883	124,100	6,009	237,232	561,785	362,653	241,299	339,505	450,535	1,755,324
Prince Edward Island..	137	4,322	27	722	17,750	2,032	57,057	89,727	30,591	14,296	243,022	23,440	386,156
Quebec................	224	11,820	44	1,829	26,060	6,958	162,276	260,059	162,948	85,230	102,730	44,159	583,403
Ontario...............	421	2,588	†83	2,129	202,350	1,339	91,166	1,657,705	230,825	116,660	....	103,430	744,431
British Columbia	*1,515	19,421	181	6,335	417,730	5,066	242,930	616,050	475,350	7,750	....	1,370,900	2,514,660
Manitoba and N.W.T..	83	1,584	†11	1,104	94,100	821	18,298	247,043	59,828	....	....	65,420	237,646
	8,879	70,080											
Totals...........		78,959	1,184	40,679	1,701,239	37,693	1,128,682	5,602,462	1,955,304	684,223	1,319,003	2,552,343	9,370,794

† Mostly Tugs. * This includes sealing fleet and crews.

STATEMENT.—Of the Lobster Industry in Canada for the year 1897.

Provinces.	Number of persons employed.	Plant.					Catch.				
		Number of Canneries.	Value.	Number of Traps.	Value.	Total value of Plant.	Number of Cans.	Value.	Fresh or Alive.	Value.	Total value of Catch.
			$		$	$		$	Cwt.	$	$
Nova Scotia	4,559	218	210,290	602,612	453,456	663,746	5,214,266	1,042,853	229,682	1,148,410	2,191,263
New Brunswick	6,105	201	144,200	220,912	195,305	339,505	2,413,404	482,681	22,055	110,275	592,956
Prince Edward Island	2,631	220	118,613	216,133	124,409	243,022	2,466,682	493,336	....	....	493,336
Quebec	1,870	99	44,310	116,695	58,420	102,730	1,036,202	207,240	94	470	207,710
Totals	15,165	738	517,413	1,156,352	831,590	1,349,003	11,130,554	2,226,110	251,831	1,259,155	3,485,265

Comparative Table showing Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries of Canada, together with the Value of Fishing Materials employed, from 1879 to 1897.

Year.	Vessels.			Boats.		Value of Nets and Seines.	Value of other Fishing Material.	Total of Capital Invested.
	No.	Tonnage.	Value.	No.	Value.			
			$		$	$	$	$
1879.........	1,183	43,873	1,714,917	25,616	854,289	988,698	456,617	4,014,521
1880.........	1,181	45,323	1,814,688	25,266	716,352	985,978	419,564	3,936,582
1881.........	1,120	48,389	1,765,870	26,108	696,710	970,617	679,852	4,113,049
1882.........	1,140	42,845	1,749,717	26,477	833,137	1,351,193	823,938	4,757,985
1883.........	1,198	48,106	2,023,045	25,825	783,186	1,243,366	1,070,930	5,120,527
1884.........	1,182	42,747	1,866,711	24,287	741,727	1,191,579	1,224,646	5,014,663
1885.........	1,177	48,728	2,021,633	28,472	852,257	1,219,284	2,604,285	6,697,459
1886.........	1,133	44,605	1,890,411	28,187	850,545	1,263,152	2,720,187	6,814,295
1887.........	1,168	44,845	1,989,840	28,092	875,316	1,499,328	2,384,356	6,748,840
1888.........	1,137	33,247	2,017,558	27,384	859,953	1,594,992	2,390,502	6,863,005
1889.........	1,100	44,936	2,064,918	29,555	965,010	1,591,085	2,149,138	6,770,151
1890.........	1,069	43,084	2,152,790	29,803	924,346	1,695,358	2,600,147	7,372,641
1891.........	1,027	39,377	2,125,355	30,438	1,007,815	1,644,892	2,598,124	7,376,186
1892.........	988	37,205	2,112,875	30,513	1,041,972	1,475,043	3,017,945	7,647,835
1893.........	1,104	40,096	2,246,373	31,508	955,109	1,637,707	3,174,404	8,681,557
1894.........	1,178	41,768	2,409,029	34,102	1,009,189	1,921,352	4,099,546	9,439,116
1895.........	1,221	37,829	2,318,290	34,268	1,014,057	1,713,190	4,208,311	9,253,848
1896.........	1,217	42,447	2,041,130	35,398	1,110,920	2,146,934	4,527,267	9,826,251
1897.........	1,184	40,679	1,701,239	37,693	1,128,682	1,955,304	4,585,569	9,370,794

COMPARATIVE TABLE showing the number of men employed in the Fishing Industry since 1879.

Years.	Number of Men in Vessels.	Number of Men in Boats.	Total Number of Fishermen.
1879	8,818	52,577	61,395
1880	8,757	51,900	60,657
1881	8,359	50,679	59,056
1882	8,498	52,785	61.283
1883	9,966	52,259	62,225
1884	9,968	51,854	61,822
1885	9,539	53,282	62,821
1886	8.927	53,073	62,000
1887	8,911	55,247	64,158
1888	9,574	53,109	62,683
1889	9,621	55,382	65,003
1890	8,726	55,000	63,726
1891	8,666	56,909	65,575
1892	8,330	55,348	63,678
1893	8,899	58,854	67,753
1894	9,525	61,194	70,719
1895	9,804	61,530	71,334
1896	9,735	65,502	75,237
1897	8,879	70,080	78,959

VALUE OF THE FISHERIES.

The total value of the Canadian fisheries for the year 1897, is computed at $22,783,546, being a surplus of $2,376,122 over that of the previous year.

This amount is subdivided by provinces as follows :—

Provinces.	Value.	Increase.	Decrease.
	$	$	$
Nova Scotia	8,090,346	2.019,451	....
British Columbia	6,136,865	1,954,866	....
New Brunswick	3,934,135	....	865,298
Quebec	1,737,011	....	288,743
Ontario	1,289,822	....	315,851
Prince Edward Island	954,949	....	21,176
Manitoba and North-west Territories	638,416	....	107,126

While Nova Scotia and British Columbia show the enormous increase of nearly four million dollars, the other provinces aggregate over one and a half million dollars short of the previous yield. These very pronounced fluctuations are fully explained in the different inspectors' reports in appendices 3 to 10. But it might be here stated, *en passant*, that the very large surplus in British Columbia, can be ascribed to the unprecedented and phenomenal catch of Salmon in the Fraser River. The salmon pack of the western province exceeded that of 1896 by twenty million cans. The yield of sturgeon also doubled the previous one. As an experiment 600,000 pounds of dry salted salmon were shipped to Japan. It is to be hoped this venture will prove successful as it would create a new outlet for an article of food considered of little value at the seat of production.

The above figures do not include the large quantity of fish consumed by the Indian population of British Columbia.

In comparing the statements of catch of the counties of Nova Scotia, it is easily noticed that the unusual increase of two million dollars is nearly all in Digby county. As the number of fishing crafts or other implements did not appear greater there than those of 1896, the attention of our local officers was called to this unprecedented yield, but they maintained the accuracy of their figures. It might be possible that such statistics were collected more carefully by the new overseer for that county than by his predecessor. Ten more localities are added to the previous list of fishing districts. Although the increase is somewhat general to the principal species, it is more strikingly so in the cod family, which shows a betterment of 600 per cent, equal to nearly one and a half million dollars. The figures for the same county for the season of 1898 will either verify or disprove the present statements and are awaited with interest.

The large falling off noticed in New Brunswick seems to have been general all along the sea-coast and comprises several kinds of fish, but herring, salmon and cod alone would cover the deficit.

Prince Edward Island shows the most uniform yield, differing only $20,000 from the year before.

The following table shows the relative values of the principal kinds of commercial fishes (above $100,000) for the year 1897, as compared with the value of the preceding year:—

Kinds of Fish.	Value.	Increase.	Decrease.
	$	$	$
Salmon	5,670,174	1,668,495	
Cod	3,909,094	289,709	
Lobsters	3,485,265	1,279,503	
Herring	2,099,077		810,667
Haddock	882,483	389,099	
Whitefish	651,429		121,916
Mackerel	597,306		130,437
Trout	534,872		178,577
Smelts	428,169		70,370
Pollock	377,312	156,194	
Hake	359,078	82,458	
Sardines	356,797	151,548	
Pickerel	316,596	41,665	
Halibut	219,338		34,097
Sturgeon	189,978	37,221	
Alewives	189,660		19,534
Oysters	180,488		13,808
Eels	133,829	887	
Shad	111,573	24,203	
Tom Cod or Frost fish	107,002		30,830

The quantity of fish used as bait is valued at $400,000 and that of fish oil at $162,000. The seal skins are valued at $317,000.

The enormous surplus of over one and a half million dollars in the value of salmon as compared with the season of 1896, has already been explained by the phenomenal catch and pack on the Fraser River during that year. While the lobster industry, both canning and shipping fresh in shell, shows a larger production, it would not suffice to reach the large surplus value of one and quarter million dollars, had not the scale of prices of both kinds been raised. It is wonderful to think that these crustaceans have been able to withstand the annual drain on them for such a number of years. Of course it now requires an increased plant to keep up the supply. Prices have advanced of late years in foreign markets, hence a more vigorous prosecution of the industry to meet the demand.

Although cod has somewhat improved it is still below the value of former years. Haddock also shows a very large increase.

Herring fell short of the previous value by over $800.000. This falling off was specially noticed in New Brunswick.

Between the years 1869 and 1897 inclusive the five principal commercial fisheries have yielded as follows:

Cod	$110,771,570
Herring	56,513,412
Lobsters	52,450,136
Salmon	51,409,845
Mackerel	38,187,142

In 1887, a statement recapitulating the aggregate quantities and values of the fisheries of Canada since the Department began collecting statistics, (1869) was published in our report of that year. This important table was continued to 1897 inclusive, and will be found herewith. It shows that the grand aggregate value of our fisheries

for the past twenty-nine years amounted to $442,758,047. Such figures tell plainly the importance of the piscine wealth at the disposition of our people. Is it not worthy of extra efforts to preserve the supply of an industry yielding annually over twenty millions dollars for future generations?

RECAPITULATION of the yield and Value of the Fisheries in the Dominion of Canada for year 1897.

	Kinds of Fish,		Quantity.	Value.	Total Value.
				$ cts.	$ cts.
1	Cod, dried	Cwt.	974,656	3,901,539 00	
	do tongues and sounds	Brls.	755½	7,555 00	3,909,094 00
2	Haddock, dried	Cwt.	224,842	674,526 00	
	do fresh	Lbs.	3,512,315	105,368 95	
	do smoked, finnan haddies	Lbs.	1,709,800	102,588 00	882,482 95
3	Hake	Cwt.	138,017	310,538 00	
	do sounds	Lbs.	97,130	48,540 00	359,078 00
4	Pollock	Cwt.	188,656		377,312 00
5	Tom Cod or frost fish	Lbs.	2,139,058		107,002 40
6	Halibut	Lbs.	3,177,138		219,338 20
7	Flounders	Lbs.	533,650		26,682 50
8	Salmon, preserved in cans	Lbs.	49,288,061	4,929,501 00	
	do fresh	Lbs.	4,165,519	651,653 60	
	do smoked	Lbs.	107,411	12,884 90	
	do salted	Brls.	8,546	76,135 00	5,670,174 50
9	Trout	Lbs.	5,544,527		534,872 70
10	Ouananiche	Lbs.	90,000		5,400 00
11	Whitefish	Lbs.	11,268,889		651,429 23
12	Smelts	Lbs.	8,563,389		428,169 45
13	Oulachans (B.C.)	Lbs.	816,500		41,900 00
14	Herring, pickled	Brls.	404,639	1,618,556 00	
	do fresh	Lbs.	24,662,612	329,682 44	
	do smoked	Lbs.	7,335,360	150,839 20	2,099,077 64
15	Sardines	Brls.	158,305	316,417 00	
	do preserved in oil	Cans.	807,600	40,380 00	356,797 00
16	Shad	Brls.	10,886		111,573 20
17	Alewives	Brls.	47,415		189,660 00
18	Pike	Lbs.	3,883,383		96,292 13
19	Maskinonge	Lbs.	690,930		41,455 80
20	Eels	Lbs.	994,483	59,668 98	
	do salted	Brls.	7,416	74,160 00	133,828 98
21	Perch	Lbs.	1,173,507		34,070 47
22	Pickerel	Lbs.	7,453,137		316,596 37
23	Bass	Lbs.	1,136,040		97,216 20
24	Mackerel, salted	Brls.	19,220	288,300 00	
	do fresh, etc	Lbs.	2,575,058	309,006 04	597,306 04
25	Sturgeon	Lbs.	3,064,636	168,535 01	
	do caviare	Lbs.	82,980	21,443 30	189,978 31
26	Lobsters, preserved	Lbs.	11,130,554	2,226,110 80	
	do alive or fresh	Cwt.	251,831	1,259,155 00	3.485.265 80
27	Oysters	Brls.	44,722		180,488 00
28	Clams				30,124 00
29	Squid	Brls.	12,649		50,596 00
30	Coarse and mixed fish	Brls.	77,927	156,695 15	
	do do	Lbs.	7,464,194	140,194 94	296,890 09
31	Home consumption, not included above				308,171 00
32	Fur-seal skins (B.C.)	No.	30,410		304,100 00
33	Hair do	No.	12,367		12,951 75
34	Sea-otter skins (B.C.)	No.	30		6,000 00
35	Beluga skins (white whales)	No.	322		1,288 00
36	Fish oil	Galls.	541,607		162,480 00
37	do used as bait	Brls.	267,557		401,335 50
38	do do manure	Brls.	132,379		66,183 00
39	do guano	Tons.	885		885 00
	Total for 1897				22,783,546 21
	do 1896				20,407,424 00
	do increase				2,376,122 21

STATEMENT of the production of each Branch of the Fisheries

Number.	Kinds of Fish.		NOVA SCOTIA.		BRITISH COLUMBIA.		NEW BRUNSWICK.	
			Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
				$		$		$
1	Cod, dried	Cwt.	703,518	2,814,072	2,875	14,375	81,583	326,332
	do tongues and sounds	Brls.	409	4,090			94	940
2	Haddock, dried	Cwt.	209,816	629,448			13,267	39,801
	do fresh	Lbs.	2,759,015	82,770			745,600	22,368
	do smoked, finnan haddies	do	949,000	56,940			760,800	45,648
3	Hake, dried	Cwt.	99,905	224,786			27,710	62,348
	do sounds	Lbs.	51,470	25,735			24,777	12,388
4	Pollock	Cwt.	176,067	352,134			12,589	25,178
5	Tom cod, or frost fish	Lbs.	121,346	6,067			1,922,912	96,146
6	Halibut	do	986,191	98,618	1,967,500	98,375	125,900	12,590
7	Flounders	do	239,250	11,962			279,900	13,995
8	Salmon, preserved in cans	do	4,583	687	49,274,188	4,927,419	9,300	1,395
	do fresh	do	350,948	70,189	1,814,500	181,450	1,355,180	271,036
	do smoked	do	5,242	1,048	85,969	8,597	16,200	3,240
	do pickled	Brls.	284	4,260	8,011	68,110	15	225
9	Trout	Lbs.	82,940	8,294	64,300	6,430	196,350	19,635
10	Ouananiche	do						
11	Whitefish	do						
12	Smelts	do	301,420	15,071	70,000	3,500	7,278,350	363,917
13	Oulachans (B.C.)	do			816,500	41,900		
14	Herring, salted	Brls.	125,298	501,192			211,366	845,464
	do fresh	Lbs.	3,722,578	37,226	430,000	12,900	8,199,500	81,995
	do smoked	do	92,900	1,858	51,650	5,165	7,162,760	143,255
15	Sardines	Brls.					156,798	311,896
	do preserved in oil	Cans.					807,600	40,380
16	Shad	Brls.	3,810	38,100			5,720	57,200
17	Alewives	do	14,215	56,860			32,390	129,560
18	Pike	Lbs.						
19	Maskinonge	do						
20	Eels	do						
	do salted	Brls.	3,326	33,260			2,270	22,700
21	Perch	Lbs.						
22	Pickerel	do					118,004	5,900
23	Bass	do	13,650	1,365			303,000	30,300
24	Mackerel, salted	Brls.	13,659	204,885			334	5,010
	do fresh, &c	Lbs.	2,154,070	258,487			404,900	48,588
25	Sturgeon	do			1,137,696	56,885	20,000	1,400
	do caviare	do			38,397	7,679	1,700	595
26	Lobsters, preserved	do	5,214,226	1,042,853			2,413,404	482,681
	do alive or fresh	Cwt.	229,682	1,148,410			22,055	110,275
27	Oysters	Brls.	2,372	9,488	1,600	8,000	19,835	79,340
28	Clams					9,080		21,044
29	Squid	Brls.	8,167	32,668			703	2,812
30	Coarse and mixed fish	do	46,506	93,012	105	1,050	3,465	6,930
	do do	Lbs.	454,900	4,549	1,222,330	45,450	87,200	2,740
31	Home consumption (not included above)					300,000		
32	Fur seal skins (B.C.)	No.			30,410	304,100		
33	Hair do	do	345	419	5,000	3,750	2	8
34	Sea otter do	do			30	6,000		
35	Beluga do white whales	do						
36	Fish oil	Galls.	252,847	75,852	95,500	28,650	58,722	17,616
37	do used as bait	Brls.	87,957	131,936			90,709	136,064
38	do do manure	do	23,523	11,155			66,400	33,200
39	do guano	Tons.						
	Totals			8,090,346		6,138,865		3,934,135

in the different Provinces of Canada for the year 1897.

Quebec.		Ontario.		Prince Edward Island.		Manitoba and N.W. Territories.		Number.
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	$		$		$		$	
166,328	665,352	...	...	20,352	81,408	...	...	1
185	1,850	...	...	67½	675	...	...	
1,044	3,132	...	...	715	2,145	...	...	2
2,600	78	...	...	5,100	153	...	...	
...	...	...	...	...	...	...	...	
314	706	...	...	10,088	22,698	...	...	3
...	...	...	...	20,883	10,417	...	...	
...	...	...	...	...	...	...	...	4
63,950	3,197	...	...	31,850	1,592	...	...	5
92,447	9,245	...	...	5,100	510	...	...	6
14,500	725	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	8
639,891	127,978	...	...	5,000	1,000	...	...	
...	...	...	...	...	...	...	...	
236	3,540	...	...	...	...	...	...	
401,010	40,101	4,714,177	454,538	31,750	3,175	54,000	2,700	9
90,000	5,400	...	...	...	...	...	...	10
110,895	8,872	2,880,131	228,664	...	...	8,277,863	413,893	11
315,076	15,754	...	...	598,543	29,927	...	...	12
...	...	...	...	...	...	...	...	13
37,502	150,008	2,109	8,436	28,364	113,456	...	...	14
4,596,900	45,969	7,445,660	148,913	267,974	2,680	...	...	
27,650	553	...	...	400	8	...	...	
1,507	4,521	...	...	...	...	...	...	15
...	...	...	...	...	...	...	...	
1,356	16,273	...	...	...	...	...	...	16
...	...	...	...	810	3,240	...	...	17
261,700	10,468	989,510	39,580	...	...	2,632,173	46,244	18
71,340	4,280	619,590	37,175	...	...	...	...	19
860,068	51,604	134,415	8,065	...	...	...	...	20
273	2,730	...	...	1,547	15,470	...	...	
175,510	5,265	941,260	28,238	...	...	56,737	568	21
920,836	46,042	2,939,749	146,988	...	...	3,474,548	117,667	22
139,980	11,198	679,410	54,353	...	...	...	...	23
...	...	...	...	1,976	29,640	...	...	24
...	...	...	...	16,088	1,930	...	...	
404,682	24,281	1,085,639	65,138	...	...	416,619	20,831	25
...	...	42,883	13,169	...	...	...	...	
1,036,202	207,240	...	...	2,466,682	493,336	...	...	26
94	470	...	...	...	...	...	...	
...	...	...	...	20,915	83,660	...	...	27
...	...	...	...	...	...	...	...	28
2,799	11,196	...	...	980	3,920	...	...	29
27,691	55,383	...	...	160	320	...	...	30
127,400	2,548	2,828,260	56,565	...	...	2,740,274	28,343	
...	...	...	...	...	...	817,100	8,171	31
...	...	...	...	...	...	...	...	32
7,020	8,775	...	...	...	...	...	...	33
...	...	...	...	...	...	...	...	34
322	1.288	...	...	...	...	...	...	35
122,421	36,726	...	...	12,117	3,635	...	...	36
57,302	85,953	...	...	31,589	47,384	...	...	37
39,086	19,543	...	...	3,370	1,685	...	...	38
...	...	...	...	885	885	...	...	39
...	1,737,011	...	1,289,822	...	954,949	...	638,416	

Statement showing the Aggregate Quantities and Value of the Fisheries of Canada
ment of Marine

Numbers.	Kinds of Fish.		Value from 1869 to 1887, both inclusive.	1888.		
				Quantity.	Value.	Total.
			$		$	$
1	Cod	Cwt.	71,796,840	1,050,877	4,203,508	
	" tongues and sounds	Brls.	330,241	2,156	21,560	4,225,068
2	Haddock	Cwt.	8,173,645	237,183	948,732	
	" finnan haddies	Lbs.	....	....	....	948,732
3	Hake	Cwt.	5,266,118	121,635	486,540	
	" sounds	Lbs.	689,599	103,557	103,557	590,097
4	Pollack	Cwt.	3,752,644	121,071	....	484,284
5	Tom cod or frost fish	Lbs.	195,440	1,299,895	....	51,996
6	Halibut	"	1,178,738	1,368,808	....	125,406
7	Flounders	"	....	83,650	....	8,365
8	Salmon, preserved in cans	"	10,523,182	8,878,156	1,110,875	
	" fresh	"	5,629,497	4,640,660	680,432	
	" pickled	Brls.	1,850,466	8,464	109,978	
	" smoked	Lbs.	299,055	30,576	6,115	1,907,400
9	Trout	"	3,973,996	5,717,460	....	510,061
10	Ouananiche	"	61,312	100,000	....	6,000
11	Whitefish	"	4,298,046	10,189,856	....	702,324
12	Smelts	"	2,858,050	3,723,772	....	222,675
13	Oulachans (B.C.)	"	41,478	76,800	....	4,880
14	Herring, pickled	Brls.	33,143,783	341,077	1,364,308	
	" fresh	Lbs.		20,806,058	616,654	
	" smoked	Boxes.		1,497,890	373,273	2,354,235
15	Sardines	Brls.	2,978,438	67,764	....	104,428
16	Shad	"	1,778,802	7,035	....	70,355
17	Alewives	"	2,498,600	28,565	....	128,541
18	Pike	Lbs.	389,725	1,509,878	....	55,334
19	Maskinonge	"	334,729	786,981	....	47,219
20	Eels	"	1,555,867	1,590,145	114,779	
	"	Brls.		22,594	206,570	321,349
21	Perch	Lbs.	....	....	....	....
22	Pickerel	"	990,400	3,484,416	....	194,459
23	Bass	"	681,571	1,034,846	....	62,091
24	Mackerel, salted	Brls.	27,366,919	62,756	941,340	
	" fresh, &c	Lbs.		604,163	40,319	981,659
25	Sturgeon	"	699,733	1,892,518	....	111,116
26	Lobsters, in cans	"	29,792,024	9,597,773	1,207,034	
	" alive or fresh	Tons.	1,041,317	6,288	276,355	1,483,389
27	Oysters	Brls.	1,936,106	56,234	....	163,902
28	Clams	"	....	....	....	3,000
29	Squid	"	211,552	12,446	....	49,784
30	Coarse and mixed fish	"	3,171,286	57,867	....	261,852
31	Home consumption, not included above		3,435,027	....	....	203,235
32	Fur-seal skins (B.C.)	No.	1,695,568	27,983	....	279,830
33	Hair " "	"	946,969	32,562	....	31,687
34	Sea-otter "	"	35,100	100	....	7,500
35	Beluga (white whales)	"	15,126	455	....	1,847
36	Fish oil	Galls.	8,827,859	960,541	....	390,651
37	Fish used as bait	Brls.	1,680,909	159,391	....	231,586
38	" " manure	"	560,302	126,449	....	63,224
39	" guano	Tons.	567,528	1,158	....	28,950
	Totals		247,253,587	....	....	17,418,511

from 1869 to 1897, inclusive, as compiled from the Annual Reports of the Depart- and Fisheries.

1889.			1890.			1891.			Numbers.
Quantity.	Value.	Total.	Quantity.	Value.	Total.	Quantity.	Value.	Total.	
	$	$		$	$		$	$	
904,560	3,618,240		857,734	3,433,580		849,838	3,827,708		1
1,536	19,255	3,637,495	1,606	16,060	3,449,640	1,278	11,443	3,839,151	
125,662	532,948		133,017	....	532,068	150,170	....	525,595	2
....	....	532,948	....	....		....	....		
118,714	474,856		94,335	377,440		124,385	315,555		3
79,489	79,489	554,345	67,554	62,624	440,064	86,075	64,555	380,110	
77,196	....	308,784	68,387	....	273,548	81,248	....	243,744	4
1,414,500	....	26,580	2,224,672	....	34,245	885,350	....	21,768	5
1,903,115	....	160,059	1,525,130	....	120,673	2,719,697	....	215,469	6
84,300	....	8,430	79,000	....	7,900	126,575	....	6,329	7
20,141,152	2,417,508		19,910,304	2,389,666		15,206,328	1,522,509		8
4,267,173	634,734		3,686,998	563,533		4,404,311	671,746		
6,704	84,740		5,140	70,652		2,557	35,500		
24,714	4,943	3,141,925	63,592	12,718	3,036,569	132,472	26,495	2,256,250	
5,941,893	....	553,369	6,651,866	....	625,286	6,939,243	....	661,344	9
100,000	....	6,000	100,000	....	6,000	100,000	....	6,000	10
9,806,422	....	685,096	11,176,582	....	767,658	11,763,841	....	791,185	11
5,011,058	....	298,952	4,735,517	....	283,444	5,552,101	....	277,036	12
165,200	....	13,390	114,600	....	7,780	281,700	....	12,505	13
286,678	1,165,724		274,274	1,097,096		298.598	1,343,693		14
21,771,951	666,292		15,621,786	521,106		9,108,650	354,489		
2,685,170	666,342	2,498,358	1,354,161	340,290	1,958,492	2,386,920	596,732	2,294,914	
95,216	....	71,412	....	....	115,752	....	....	192,936	15
5,836	....	58,365	7,376	....	73,010	8,428	....	84,286	16
37,470	....	166,441	42,766	....	192,452	43,117	....	194,029	17
1,743,444	....	69,288	1,691,702	....	62,263	1,811,357	....	62,832	18
755,203	....	45,312	769,846	....	46,191	743,030	....	44,582	19
1,378,473	82,708		1,425,051	85,503		842,696	50,562		20
7,100	71,000	153,708	7,389	73,890	159,393	4,284	42,840	93,402	
....	....	....	....	....	....	....	....	....	21
3,264,501	....	182,382	3,142,189	....	173,420	2,990,679	....	134,130	22
1,153,487	....	55,725	977,470	....	58,649	799,324	....	47,959	23
62,237	874,302		96,246	1,443,690		139,261	1,949,654		24
738,712	56,095	930,397	1,053,564	81,287	1,524,977	165,981	19,918	1,969,572	
1,773,685	....	102,128	2,047,170	....	116,992	....	1,525,246	87,789	25
10,637,233	1,276,468	....	11,559,984	1,387,199		14,285,157	1,999,921		26
5,247	208,020	1,484,488	6,748	261,146	1,648,345	6,312	252,500	2,252,421	
63,049	....	189,897	56,676	....	171,778	61,032	....	183,846	27
....	....	19,950	....	....	16,180	....	....	16,024	28
11,649	....	46,596	13,138	....	52,452	8,348	....	33,392	29
61,853	....	251,588	64,328	....	260,102	64,650	....	247,695	30
....	....	295,871	....	....	327,810	....	....	284,647	31
33,570	....	335,700	44,751	....	492,261	52,985	....	794,925	32
33,333	....	31,583	27,245	....	24,695	25,962	....	31,159	33
115	....	11,500	102	....	10,200	....	....	....	34
777	....	3,151	549	....	2,271	301	....	1,204	35
984,183	....	407,815	727,020	....	315,034	834,347	....	358,668	36
217,609	....	261,347	165,590	....	248,986	178,731	....	212,736	37
60,563	....	30,281	122,484	....	61,242	198,386	....	99,194	38
984	....	24,600	602	....	17,080	770	....	19,250	39
....	....	17,655,256	....	....	17,714,902	....	....	18,978,078	

STATEMENT showing the Aggregate Quantities and Value of the

Number.	KINDS OF FISH.		1892.		
			Quantity.	Value.	Total.
				$	$
1	Cod	Cwt.	880,184	4,050,468	
	" tongues and sounds	Brls.	1,299	12,990	4,063,458
2	Haddock	Cwt.	167,578	...	586,525
	" fresh or finan haddies	Lbs.	...	...	...
3	Hake	Cwt.	116,711	350,133	
	" sounds	Lbs.	84,117	42,059	392,192
4	Pollack	Cwt.	74,294	...	222,882
5	Tom cod or frost fish	Lbs.	857,000	...	24,100
6	Halibut	"	3,430,809	...	275,207
7	Flounders	"	200,000	...	10,010
8	Salmon, preserved in cans	"	11,514,622	1,382,535	
	" fresh	"	5,430,749	791,601	
	" pickled	Brls.	3,132	40,660	
	" smoked	Lbs.	140,258	28,052	2,242,848
9	Trout	"	7,315,219	...	711,112
10	Ouananiche	"	100,000	...	6,000
11	Whitefish	"	23,776,763	...	1,498,523
12	Smelts	"	4,719,193	...	235,959
13	Oulachans (B.C.)	"	372,300	...	19,045
14	Herring, pickled	Brls.	300,223	1,351,005	
	" fresh	Lbs.	9,748,240	383,030	
	" smoked	"	14,975,675	301,596	2,035,631
15	Sardines	Brls.	...	...	118,213
	" preserved	Cans.	...	...	...
16	Shad	Brls.	9,989	...	99,892
17	Alewives	"	37,684	...	168,180
18	Pike	Lbs.	9,682,570	...	224,254
19	Maskinonge	"	541,250	...	32,475
20	Eels	"	906,755	54,251	
	"	Brls.	4,891	48,910	103,161
21	Perch	Lbs.	...	...	...
22	Pickerel	"	3,893,190	...	188,574
23	Bass	"	805,560	...	48,333
24	Mackerel, salted	Brls.	95,044	1,330,618	
	" fresh, etc	Lbs.	136,330	16,360	1,346,978
25	Sturgeon	"	1,628,435	...	90,541
26	Lobsters, in cans	"	12,524,498	1,753,429	
	" alive or fresh	Tons.	6,012	238,400	1,991,829
27	Oysters	Brls.	55,953	...	167,659
28	Clams	"	...	...	18,634
29	Squid	"	9,794	...	39,176
30	Coarse and mixed fish	"	88,630	...	266,929
31	Home consumption, not included above		...	...	296,644
32	Fur-seal skins (B.C.)	No.	46,362	...	602,706
33	Hair "	"	25,671	...	30,414
34	Sea-otter skins (B.C.)	"	14	...	2,100
35	Beluga " (white whales)	"	316	...	1,318
36	Fish oil	Galls.	836,699	...	359.904
37	Fish used as bait	Brls.	243,744	...	313,126
38	" " manure	"	138,324	...	69,164
39	" guano	Tons.	2,774	...	37,475
	Total		...	...	18,941,171

Fisheries of Canada from 1869 to 1897—*Continued.*

1893.			1894.			1895.			Number.
Quantity.	Value.	Total.	Quantity.	Value.	Total.	Quantity.	Value.	Total.	
	$	$		$	$		$	$	
892,978	4,019,193		938,027	4,225,896		806,415	3,630,279		1
925	9,255	4,028,448	833	8,335	4,234,231	824	8,240	3,638,519	
133,234	....	466,320	137,140	479,988		120,758	422,653		2
....	....	....	503,490	36,559	516,547	231,000	22,050	444,703	
107,518	322,554		103,297	263,059		73,424	186,890		3
90,539	45,270	367,824	83,187	41,593	304,652	47,931	23,966	210,856	
80,527	....	241,581	88,758	....	221,894	59,507	....	148,767	4
1,611,428	....	77,070	1,816,320	....	90,816	2,910,510	....	138,525	5
2,840,619	....	215,367	3,481,276	....	254,152	3,977,350	....	270,901	6
405,450	....	20,272	424,320	....	20,976	252,432	....	12,622	7
29,233,317	2,926,502		23,647,162	2,365,717		28,858,897	2,886,479		8
7,149,123	890,694		5,484,653	801,430		4,872,770	794,964		
6,804	63,360		5,629	51,404		3,825	42,312		
150,710	10,088	3,890,644	80,280	8,888	3,227,439	56,460	8,962	3,732,717	
6,667,639	....	658,614	7,926,883	....	758,147	7,134,116	....	702,589	9
100,000	....	6,000	100,000	....	6,000	100,000	....	6,000	10
21,390,289	....	1,298,744	14,854,170	....	879,650	14,249,399	....	767,307	11
8,283,481	....	414,174	8,087,079	....	404,883	9,022,157	....	451,108	12
298,300	....	17,934	336,700	....	17,090	594,200	....	30,625	13
316,746	1,425,812		439,238	1,977,336		511,470	2,301,616		14
13,854,974	317,631		16,966,241	404,966		11,556,085	295,705		
5,437,620	109,448	1,852,891	9,100,980	183,428	2,565,730	10,051,613	203,235	2,800,556	
100,879	205,518		136,828	274,756		188,089	377,292		15
250,000	12,500	218,018	220,000	11,000	285,756	924,000	46,200	423,492	
7,708	....	77,076	9,244	....	92,432	9,639	....	98,181	16
47,281	....	212,714	63,470	....	253,904	48,108	....	192,432	17
8,737,605	....	209,688	3,079,484	....	81,656	3,592,975	....	103,325	18
505,495	....	30,330	627,457	....	37,647	455,535	....	27,352	19
941,150	56,203		951,350	48,979		909,270	54,556		20
8,259	82,590	138,793	7,978	75,116	124,095	9,984	96,880	151,436	
....	....	....	971,814	....	28,970	1,010,580	....	29,727	21
3,848,304	....	157,410	7,610,425	....	293,266	7,678,411	....	303,296	22
1,131,091	....	79,201	1,289,461	....	95,801	1,159,870	....	85,567	23
67,912	904,832		53,087	731,782		35,554	497,756		24
2,172,097	191,234	1,096,066	1,803,072	177,088	908,870	2,068,236	238,899	736,655	
1,860,477	....	105,795	2,182,071	....	119,055	1,749,520	....	155,176	25
13,674,413	1,914,458		13,333,693	1,803,256		12,345,592	1,666,388		26
7,347¼	570,110	2,484,568	7,565	567,375	2,370,631	7,374	543,708	2,210,096	
51,080	....	156,440	45,127	....	182,108	47,673	....	192,292	27
....	....	68,658	....	....	62,996	....	....	69,027	28
10,936	....	43,744	14,868	....	59,470	15,055	....	60,220	29
57,969	....	201,647	87,398	....	269,068	80,850	....	296,789	30
....	....	256,149	....	....	226,208	....	....	269,282	31
70,332	....	843,984	94,474	....	944,740	71,359	....	713,590	32
26,349	....	30,859	21,643	....	25,405	16,469	....	18,753	33
15	....	1,875	12	....	1,500	16	....	2,000	34
251	....	1,004	97	....	388	205	....	820	35
804,820	....	321,927	745,848	....	298,338	620,613	....	248,246	36
224,430	....	294,270	250,984	....	332,417	234,696	....	352,047	37
147,732	....	73,867	106,239	....	53,120	105,209	....	52,605	38
1,510¾	....	26,694	5,117	....	71,525	3,615	....	51,155	39
....	....	20,686,661	....	....	20,719,573	....	....	20,199,338	

Statement showing the Aggregate Quantities and Value of the

Number.	Kinds of Fish.		Quantity.
1	Cod, dried	Cwt.	809,608
	„ tongues and sounds	Brls.	845
2	Haddock	Cwt.	125,122
	„ fresh or smoked	Lbs.	1,116,000
3	Hake	Cwt.	94,808
	„ sounds	Lbs.	69,867
4	Pollack	Cwt.	88,781
5	Tom cod or frost fish	Lbs.	2,657,465
6	Halibut	„	3,672,625
7	Flounders	„	189,159
8	Salmon, preserved in cans	„	29,872,740
	„ fresh	„	5,439,942
	„ pickled	Brls.	3,186
	„ smoked	Lbs.	49,133
9	Trout	„	7,405,986
10	Ouananiche	„	90,000
11	Whitefish	„	13,374,000
12	Smelts	„	9,970,805
13	Oulachans, B.C	„	581,500
14	Herring, pickled	Brls.	490,171
	„ fresh	Lbs.	22,289,796
	„ smoked	„	10,980,450
15	Sardines	Brls.	86,981
	„ preserved in oil	Cans.	576,700
16	Shad	Brls.	8,586
17	Alewives	„	52,616
18	Pike	Lbs.	3,594,790
19	Maskinonge	„	807,950
20	Eels	„	1,037,535
	„	Brls.	7,333
21	Perch	Lbs.	1,333,550
22	Pickerel	„	6,897,810
23	Bass	„	1,294,595
24	Mackerel, salted	Brls.	37,765
	„ fresh, &c	Lbs.	2,427,972
25	Sturgeon	„	2,403,801
26	Lobsters, in cans	„	10,906,638
	„ alive or fresh	Tons.	8,988
27	Oysters	Brls.	48,574
28	Clams	„	19,791
29	Squid	„	24,500
30	Coarse and mixed fish	„	104,832
31	Home consumption, not included above	Lbs.	1,894,856
32	Fur-seal skins in British Columbia	No.	55,677
33	Hair „	„	16,808
34	Sea-otter „ in British Columbia	„	23
35	Beluga „ (white whales)	„	222
36	Fish oil	Galls.	557,140
37	„ used as bait	Brls.	256,146
38	„ „ manure	„	127,658
39	„ guano	Tons.	3,416
	Total		....

Fisheries of Canada from 1869 to 1897, inclusive, &c.—*Concluded.*

1896.		1897.			Total Value from 1869 to 1897.	Number.
Value.	Total.	Quantity.	Value.	Total.		
$	$		$	$	$	
3,610,935		974,656	3,901,539			
8,450	3,619,385	755½	7,555	3,909,094	110,771,570	1
421,204		224,842	674,526			
72,180	493,384	5,222.115	207,957	882,483	14,102,950	2
241,687		138,017	310,538			
34,933	276,620	97,130	48,540	359,078	9,831,555	3
....	221,118	188,656	....	377,312	6,496,558	4
....	137,832	2,139,058	....	107,002	905,374	5
....	253,435	3,177,138	....	219,338	3,288,745	6
....	9,613	533,650	....	26,682	131,199	7
2,988,258		49,288,061	4,929,500		35,442,731	8
965,029		4,165,519	651,654		13,075.314	
36,498		8,546	76,135		2,461,705	
11,894	4,001,679	107,411	12,885	5,670,174	430,095	
....	713,449	5,544,527	....	534,873	10,402,840	9
....	5,400	90,000	....	5,400	120.112	10
....	773,345	11,268,889	....	651,429	13,113,307	11
....	498,539	8,563,389	....	428,170	6,372,990	12
....	29,550	816;500	....	41,900	236,177	13
2,183,559		404,639	1,618,556			14
504,893		24,662,612	329,682			
221,292	2,909,744	7,335,360	150,839	2,099,078	56,513,412	
176,414		158,305	316,417			
28,835	205,249	807,600	40,380	356,797	5,070,491	15
....	87,370	10,886	....	111,573	2,631,342	16
....	209,194	47,415	....	189,660	4,406,147	17
....	99,008	3,883,383	....	96,292	1,453,665	18
....	48,477	690,930	....	41,456	735,750	19
62,252		994,483	59,669			
70,690	132,942	7,416	74,160	133,829	3,067,975	20
....	38,840	1,173,507	....	34,071	131,610	21
....	274,931	7,453,137	....	316,596	3,208,864	22
....	94,442	1,136,040	....	97,216	1,404,555	23
528,710		19,220	288,300			
199,033	727,743	2,575,058	309,006	597,306	38,187,142	24
....	152,757	3,147,616	....	189,978	1,931,060	25
1,526,928		11,130.554	2,226,111		46,553,216	26
678,834	2,205,762	12,591	1,259,155	3,485,266	5,896,920	
....	194,296	44,722	....	180,488	3,718,812	27
....	70,960	....	....	30,124	375,553	28
....	98,000	12,649	....	50,596	744,982	29
....	284,639	....	....	296,890	5,808,486	30
....	287,896	....	....	308,171	6,190,940	31
....	501,093	30,410	....	304,100	7,508,497	32
....	19,157	12,367	....	12,952	1,203,633	33
....	4,025	30	....	6,000	81,800	34
....	5,328	322	....	1,288	33,745	35
....	224,633	541,607	....	162,480	11,915,555	36
....	384,219	267,557	....	401,336	4,712,979	37
....	63,830	132,379	....	66,183	1,193,012	38
....	49,540	885	....	885	894,682	39
....	20,407,424	....	....	22,783,546	442,758,047	

RECAPITULATION.

SHOWING the Total Value of the Fisheries in the respective Provinces of Canada, from 1870 to 1897, inclusive, as compiled from the Annual Reports of the Department of Fisheries.

Year.	Nova Scotia.	New-Brunswick.	Prince Edward Island.	Quebec.	Ontario.	British Columbia.	Manitoba and North-west Territories.	Total for Canada.
	$	$	$	$	$	$	$	$
1870	4,019,425	1,131,433	No data	1,161,551	264,982	No data	No data	6,577,391
1871	5,101,030	1,185,033	do	1,093,612	193,524	do	do	7,573,199
1872	6,016,835	1,965,459	do	1,320,189	267,633	do	do	9,570,116
1873	6,577,087	2,285,662	207,595	1,391.564	293,091	do	do	10,754,997
1874	6,652,302	2,685,794	288,863	1,608,660	446,267	do	do	11,681,886
1875	5,573,851	2,427,654	298,927	1,596,759	453,194	do	do	10,350,385
1876	6,029,050	1,953,389	494,967	2,097,668	437,229	104,697	do	11,117,000
1877	5,527,858	2,133,237	763,036	2,560,147	438,223	583,433	do	12,005,934
1878	6,131,600	2,305,790	840,344	2,664,055	348,122	925,767	do	13,295,678
1879	5,752,937	2,554,722	1,402,301	2,820,395	367,133	631,766	do	13,529,254
1880	6,291,061	2,744,477	1,675,089	2,631,556	444,491	713,335	do	14,499,979
1881	6,214,782	2,930,904	1,955,290	2,751,962	509,903	1,454,321	do	15,817,162
1882	7,131,418	3,192,339	1,855,687	1,976,516	825,457	1,842,675	do	16,824,092
1883	7,689,374	3,185,674	1,272,468	2,138,997	1,027,033	1,644,646	do	16,958,192
1884	8,763,779	3,730,454	1,085,619	1,694,561	1,133 724	1,358,267	do	17,766,404
1885	8,283,922	4,005,431	1,293,430	1,719,460	1,342,692	1,078,038	do	17,722,973
1886	8,415,362	4,180,227	1,141,991	1,741,382	1,435,998	1,577,348	186,980	18,679,288
1887	8,379,782	3,559,507	1,037,426	1,773,567	1,531,830	1,974,887	129,084	18,386,103
1888	7,817,030	2,941,863	876,862	1,860,012	1,839,869	1,902,195	180,677	17,418,510
1889	6,346,722	3,067,039	886,430	1,876,194	1,963,123	3,348,067	167,679	17,655,256
1890	6,636,444	2,699,055	1,041,109	1,615,119	2,009,637	3,481,432	232,104	17,714,902
1891	7,011,300	3,571,050	1,238,733	2,008,678	1,806,389	3,008,755	332,969	18,977,878
1892	6,340,724	3,203,922	1,179,856	2,236,732	2,042,198	2,849,483	1,088,254	18,941,171
1893	6,407,279	3,746,121	1,133,368	2,218,905	1,694,930	4,443,963	1,042,093	20,686,661
1894	6,547,387	4,351,526	1,119,738	2,303,386	1,659,968	3,950,478	787,067	20,719,573
1895	6,213,131	4,403,158	976,836	1,867,920	1,584,473	4,401,354	752,466	20,199,338
1896	6,070,895	4,799,433	976,126	2,025,754	1,605,674	4,183,999	745,543	20,407,425
1897	8,090,346	3,934,135	954,949	1,737,011	1,289,822	6,138,865	638,416	22,783,546
Totals	186,032,713	84,874,458	25,997,040	54,492,312	29,256,629	51,597,771	6,283,262	438,530,201

FISH CULTURE.

The fish-breeding report for the year 1898, by Professor E. E. Prince, Commissioner of Fisheries, forms Appendix 12 of this publication. It also comprises details of the capture of parent fish, the collection and hatching of eggs, &c., by the respective officers in charge of the different hatcheries.

The experiment of hatching sea trout in co-operation with the provincial authorities at the Miramichi hatchery was continued this season; as the first attempt had been successful. Some lakes in the Parry Sound district, province of Ontario, were successfully stocked with adult black bass.

Out of the fifteen government hatcheries three were not in operation last season. The remaining twelve turned out nearly two hundred million fry, 85,000,000 of which were lobsters.

At St. John, N.B., during the manipulation of parent salmon, our officer reports a remarkable fact worthy of record, viz., the occurrence of a salmon containing both eggs and milt. This officer kept the fish alive for some time, as specimens of salmon in which ripe eggs and milt are developed are of great rarity, in order that a full scientific examination of it might be made by Professor Prince. The eggs taken from this fish are undergoing incubation at the Restigouche hatchery.

OYSTER CULTURE.

Besides the usual details of the season's work in the cultivation of oysters by our expert, the department publishes this year a full report on the oyster fisheries of Canada prepared by Mr. Ernest Kemp. First, the causes of depletion on the Canadian oyster beds are fully treated, numerous extracts from former reports by our different inspectors prove the continual drain of the past years on our oyster supply. The table, page 353, shows that over one million barrels of oysters were taken from our waters during the last twenty-two years, more than half of which came from Prince Edward Island.

After having explained the different systems of oyster culture in England, France, Holland, Italy and especially in the United States, Mr. Kemp shows what has been done and what might be attempted in Canada, having due regards to the difference in climate.

Those interested in the oyster culture will find valuable detailed information from different authorities quoted in this Appendix No. 10, which the expert condenses in three lines: "Keep the cultch clean, keep down the vermin, separate from the collectors as soon as possible, protect from frost during the winter, keep the oysters quiet during the spatting season, and hope for warm, calm and settled summer weather."

The points of difference between the Canadian and European oyster are summarized by Professor Prince in his article, "*Peculiarities in the Breeding of oysters*" as follows:

"*Canadian Oyster.*"

"(1.) Sexes separate.
"(2.) Unfertilized eggs shed by parent.

"(3.) Eggs and sperm meet in the open sea and fertilization is accomplished.

"(4.) The swimming embryo is naked and has for a time no shell.

"(5.) Number of eggs enormous, probably 50 to 150 millions produced by each female oyster.

"*European Oyster.*"

"(1.) Sexes combined in the same individual.

"(2.) Eggs never shed before fertilization.

"(3.) Eggs fertilized and retained within the mother-oyster's shell.

"(4.) Embryos protected by a thin shell, and emitted as black spat.

"(5.) Eggs do not exceed one or two millions, *i.e.*, one egg for every hundred eggs produced by Canadian oyster."

The above also shows the extraordinary fecundity of our oyster as compared with the European bivalve.

Amongst the injurious agencies in regard to oysters Mr. Kemp does not omit to mention the destructive work of the so-called mud digging machines. He also advocates the use of dredges instead of rakes, tongs or any other primitive implements wherever practicable.

FISHERIES PROTECTION SERVICE.

A full report of the operation of this service for the season of 1898, by Commander O. G. V. Spain, will be found in Appendix No. 12, of this annual report. This service has been carried on in a most satisfactory and painstaking manner, especially taking into consideration the momentous questions which were before the Joint High Commission in particular reference to the work of this branch of the Marine and Fisheries Department. Commander Spain was called twice to attend the said Commission, once in Quebec and again in Washington.

The number of United States vessels taking advantage of the *modus vivendi* licenses was largely in excess of last year, being the highest number since 1892.

A glance at the long list of the United States fishing schooners which called at our ports shows what vital importance these places are to foreign fishermen in the prosecution of their calling.

A great deal of time was expended by Commander Spain and his officers endeavouring to stop illegal lobster fishing, and there is no doubt that there was less of this poaching than ever before.

For the season of 1898, the fleet of our cruisers was nearly the same as before.

All captains of the Fisheries Protection Service are also fishery officers with power of a justice of the peace for all purposes of The Fisheries Act. They were as follows:—

Commander O. G. V. Spain, commanding Fisheries Protection Service
and Commissioner of Police in Canada.
Captain S. Belanger of the cruiser "Aberdeen."
Captain J. H. Pratt do "Curlew."
Captain Geo. M. May do "Constance."

Captain W. H. Kentof the cruiser "Kingfisher."
Captain C. T. Knowlton do "Osprey."
Commander Wakeham (Commissioner of Police in Quebec), of the cruiser "La Canadienne."
Sailing Master J. Rood of the cruiser "Acadia."
Captain Ed. Dunn do "Petrel," Ontario.
Captain G. W. Pearson do "Dolphin," Ontario.
Captain J. T. Walbran do "Quadra," for British Columbia.

FISHERIES INTELLIGENCE BUREAU.

A full report on this branch of the service, which also comes under the charge of the officer commanding the Protection Service, by Mr. W. M. Hutchins, clerk in charge, will be found of great interest.

Daily compilation of the reports sent to Halifax by the fifty-three stations now dispersed on our extensive coasts, are telegraphed to the principal fishing localities of the provinces.

THE PELAGIC SEALING QUESTION.

The principal interest in this subject has centered on that branch of it generally known as the "Behring Sea Question," although considerable prominence has been achieved by the Asiatic—that is the Japanese and Russian features of the case.

During the two seasons preceding the one now being dealt with, concerted action on the part of Her Majesty's Government, that of Canada and that of the United States, was taken with a view to elucidate as much as possible the question of the natural history of these animals looking to a possible revision of the Paris Award Regulations before the advent of the sealing season of 1899, such possible revision having been contemplated by the arbitrators and provisionally arranged for by the Award finally reached at Paris.

The result of the findings of the expert examiners was embodied in a joint statement of facts reached at a conference between naturalists of Great Britain, Canada and the United States held in Washington in the fall of 1897. The full text of which is published in Appendix 13 to the Report of this Department for last year.

The transactions between Canada and the United States however, assumed very considerably larger proportions than a mere consideration of this isolated question and in the Protocols reached for a Joint High Commission looking to the settlement of all points in difference between the two countries, the Behring Sea controversy found a place in common with the rest, and was consequently for the time being removed from the realm of ordinary diplomatic correspondence between the Governments concerned, thus marking the main branch of the question for the present season with less incident available for publication than for some years past, and no settlement being reached by the High Commissioners and no revision of the Paris Regulations being possible of consummation between the governments interested, those restrictions will necessarily obtain during the season of 1899. The question of the sealing industry is dealt with in a report by Mr. Venning in Appendix No. 14 dealing with the clearance of sealing vessels, their catch, and other incidental points, including a reference to the payment of the award of the Behring Sea Claims Commission, the Russian award to the "Willie McGowan" and "Ariel" and the agreement for arbitration of other seizures by Russia in 1892.

THE STAFF.

The outside staff of Fishery Officers connected with the Department during the year ending 31st December, 1898, aggregate 800 men including the crews of the Fisheries Protection fleet.

These officers were dispersed by provinces as follows:

Ontario	97
Quebec	67
Nova Scotia	56
New Brunswick	29
Prince Edward Island	5
Manitoba	5
North-west Territories	7
British Columbia	9
Fishery guardians employed in 1898	200
Officers and crews of the Fisheries Protection Vessels	325
Total	800

The full list of officers is not published in this report as usual, owing to the fact that all the Ontario contingent has been dispensed with. The following were Inspectors at the end of year 1898.

The list of Commanders of Cruisers will be found above.

Name.	P. O. Address.	Extent of Jurisdiction.
Bertram, A. C.	North Sydney, N.S.	District No. 1.—Cape Breton Island.
Hockin, Robt.	Pictou, N.S.	District No. 2.—Cumberland, Colchester. Pictou, Antigonish, Guysboro', Halifax and Hants counties.
Ford, L. S.	Milton, N.S.	District No. 3.—Lunenburg, Queen's, Shelburne, Yarmouth, Digby, Annapolis and King's counties.
Pratt, J. H.	St. Andrews, N.B.	District No. 1.—The county of Charlotte.
Chapman, Robt. A.	Moncton, N.B.	District No. 2.—Restigouche, Gloucester, Northumberland, Kent, Westmorland and Albert counties.
Miles, H. S.	Oromocto, N.B.	District No. 3.—St. John, King's, Queen's, Sunbury, York, Carleton and Victoria counties.
Matheson, J. A.	Campbellton, P.E.I.	Prince Edward Island.
Mitchell, Hon. Peter	Montreal, Que.	Province of Quebec and Maritime Provinces.
Wakeham, Wm., M.D.	Gaspe Basin, Que.	Lower St. Lawrence River and Gulf.
Sheppard, O. B.	Toronto, Ont.	Province of Ontario.
Colcleugh, F. W.	Selkirk, Man.	Province of Manitoba.
Miller, E. W.	Qu'Appelle, N.W.T.	All the North-west Territories.
McNab, John	N. Westminster, B.C.	Province of British Columbia.

The following are the officers in charge of the Government Fish Hatcheries:

Name.	Rank.	P. O. Address.
Armstrong Wm.	Officer in charge of Government Fish Hatchery	Newcastle, Ont.
Parker, Wm	do do	Sandwich, Ont.
Walker, John	do do	Ottawa, Ont.
Finlayson, Alex	Asst. officer in charge of Government Fish Hatchery	Magog, Que.
Catellier, L. N.	Officer in charge of Government Fish Hatchery	Tadoussac, Que
	do do	Gaspé Basin, Que.
Mowat, Alex	do do	Campbellton, N.B.
McCluskey, Chas	do do	Grand Falls, N.B.
Sheasgreen, Isaac	do do	South Esk, Miramichi, N.B.
Ogden, A.	do do	Bedford Basin, N.S.
do	do Government Lobster Hatchery	Pictou, N.S.
	Asst. officer in charge of Government Fish Hatchery	Sydney, C.B., N.S.
McNab, John	Officer in charge of Government Fish Hatchery	New Westminster, B.C.
Colcleugh, F. W	do do	Selkirk, Man.
Kemp, Ernest	do Oyster culture	Ottawa, Ont.

Fishing Season of 1898.

According to preliminary reports received from our different officers in all parts of our extensive coasts, the aggregate value of our fisheries will be an average year about twenty million dollars. The falling off of 50 per cent in the British Columbia salmon packing industry alone suffice to justify the probable decrease of a couple of million dollars for the large value of 1897 published in detail in this report. It should be remembered that our annual production from the sea is more than half of the total value of all minerals produced in Canada last year even including the golden Yukon.

CAPE BRETON ISLAND.

Inspector A. C. Bertram says that the fisheries of this Island for the season just ended may be considered an average yield. While the statistics will show a falling off in mackerel and mid-summer herring, they will also give an increase in nearly all other branches. On that section of Cape Breton coast from Cape St. Lawrence in the county of Inverness, to and including Isle Madame in the county of Richmond, the mackerel fishery has been almost a failure Indeed on this extensive stretch of Atlantic coast the fall mackerel fishery, so valuable to our local fishermen, was never worse than this autumn. The fall run of mackerel are large and fat and as these fish command a high price, the local fishermen prepared to vigorously prosecute this fishery. This autumn, however, the run must have passed south from the North Bay in deep waters as gill-net fishermen missed them and none were taken. The mid-summer run of herring, formerly so valuable to our local fishermen, was also a failure this year.

The lobster fishery was profitable both to fishermen and packers. The season was unusually favourable so far as weather was concerned and the prices for the canned product were such that the packers could afford and did pay more to the fishermen for their catches. On the whole the season was a profitable one. The cod fishery is one of the branches which has helped the fishermen to make an average season. Cod were fairly plentiful and the price realized was greatly in excess of recent years. Other branches give an average yield.

Inspector Robt. Hockin says that the yield of the lobster fishery, which is of chief importance in his district, will be this season equal to 95 per cent of that of last. While the operations of the fishermen were very much retarded by the boisterous weather of the previous spring this year favourable weather was experienced. The prices obtained for the fish were better than last year and the enhanced value will more than make up the difference in the quantity caught. Of the cod family fisheries, the results will be about ten per cent over those of last year. Not only was the quantity caught larger, but better prices also prevailed. The alewive and herring yield will be 30% less that year while of mackerel will be 50% less.

The yield of halibut shows a large increase over last season. The salmon-catch will be about equal that of shad, slightly over last season. In the other fisheries, the combined results do not materially affect the aggregate values, and the catch will be about an average one.

Inspector L. S. Ford states that taking the different counties of this district together will yield an average catch. Digby county with its mixed fisheries has had another successful year excepting the mackerel which again failed. The dealers of that county are evidently up to date. The finnan haddies industry is assuming extensive proportions. Yarmouth county will yield an average catch, the shortage in some lines will be made up by the better prices in others. Quite a few mackerel were caught in traps but the gill-nets did not share so well. The large lobsters for the export trade were scarce, but the packers had a fair supply of the smaller ones. The Shelburne fishermen did not share as well as usual. The fact that many of them fell short of the quantity required to secure the fishing bounty tells its own story. The failure of the herring fishery might also prove detrimental to the lobster industry. The Lunenburg fleet, the most important fishing fleet of any county in Canada did fairly well on the grand banks. The shore fishermen especially those engaged in mixed fisheries also secured good fares. The prices of fish were generally improved.

NEW BRUNSWICK.

Inspector J. H. Pratt of Bay of Fundy Coast, reports:

That the value and product of the fisheries of this district will show very few changes this season from that of 1897. The herring fishery, the principal industry, was prosecuted with the usual untiring energy of former seasons, and the catch will about equal that of 1897. The herring schools were as erratic in their movements as ever, deserting some of their former haunts and appearing plentifully in parts of the district where for years they had not been noticed. The large catches sold readily for smoking and canning purposes. Lobsters will show a falling off in the yield but quite an increase in the prices received by the fishermen. The catch of line fish of all kinds will show a shortage, owing partly to the pervalence of the great enemy, the dog-fish, and partly to the fact that many fishermen attended more closely to the weir fisheries than in former seasons.

Inspector R. A. Chapman of the Eastern counties, says that the aggregate of fish caught in this district for 1898 will be about the same as in 1897. More shad were taken, but this fishery can only be restored by a close time until after they have spawned. Salmon were scarce on the Miramichi River and estuaries, but more plentiful on the Restigouche and coast leading thereto, making the average about the same as in 1897. Spring herring were extremely plentiful and the take on the herring banks in August and September was fully up to the average. Mackerel were scarce everywhere on the coasts, the catch of codfish was generally good and prices much above those of last year. Smelt were very plentiful in all the rivers in the fall of 1897, but ice formed in November which was carried out the latter part of that month by a freshet taking the fish out also, and in the small rivers they never came back, this makes the aggregate rather below the large catch of the previous two or three years. The quantity of oysters taken was fully up to the average. With a large number of traps and more gear about the same number of cases of lobsters were packed as during the previous year, but prices ranged very high which will stimulate canners to renewed efforts and which will work disastrously in the long run, unless the Commission appointed leads to a remedy.

Inspector H. S. Miles, of the inland districts, says that the fishing industry in his district is in a flourishing condition and the present indications are that the general aggregate will compare favourably with that of other years. Excellent results are obtained from the fish hatchery in the north of the district, and this year during the "Stripping" process at the Carleton fish pond the unprecedented phenomenon of a salmon containing both spawn and milt was observed, the fish was carefully placed in a "Pontoon" and Overseer O'Brien intended to send the fish to Professor Prince at Ottawa.

PRINCE EDWARD ISLAND.

Inspector J. A. Matheson, of Prince Edward Island, reports that the yield from the fisheries of this province, for this season, will be about an average one. Lobster, although decreasing in size, owing to the increase of fishing material will nearly come up to the pack of last season, mackerel was unusually scarce, cod and hake were about an average yield, oysters in Prince County were about forty per cent better than last season, in Queen's and King's Counties the catches were about as usual, all other kinds of fish were about equal to the past few years, prices of fish were well sustained throughout the season. A new industry has been started in the fishing and shipping of Quahaugs from Prince County, which may soon add largely to the exports of the province. Smelt fishing is being prosecuted with the usual vigour, and fair catches have been reported.

QUEBEC.

Dr. Wakeham officer in charge of the Gulf St. Lawrence Division, reports a poor fishing season for 1898, and estimates the falling off at nearly one-third of the usual total value. This shortage is chiefly attributed to the failure of the summer cod fishery between Esquimaux Point and the Straits of Belle Isle. Over the rest of the coast this fishery was fairly good, but during the fall the weather became so rough that it was impossible to prosecute the industry, in fact as many as thirty boats were broken up and lost at one point alone by one of these easterly gales. The salmon fishing will also be below the average. This is due more to unfavourable weather than scarcity of fish.

The breeding fish were reported abundant on the pools of spawning rivers. While the lobster industry in spite of increased plant shows a steady decline in the counties of Gaspé and Bonaventure, in the north coast of Saguenay the pack will exceed all previous ones, owing of course to the number of new canneries in operation. The mackerel fishery at Magdalen Islands was good. These fish were large and fat, commanding high prices. On the remainder of the coast few mackerel were caught or seen. Owing to the failure of the cod fishery on Labrador, some distress existed, but was relieved by the local Government. The extent of this distress was as usual fairly exaggerated.

NORTH-WEST TERRITORIES.

Inspector E. W. Miller writes :—From nearly all the lake districts favourable reports are to hand showing that in the protected parts not only the fish are maintaining their numbers but they show no falling off in size or quality. A few lakes in or adjoining Indian Reserves have been almost depleted in former years, and in some instances, the whitefish appear to be practically exterminated. As a recurrence of the overfishing and use of small mesh nets which produced this result can now be, to a large extent, prevented, it is very desirable that the lakes in question should be restocked. The river fisheries are still on the decline. Efficient guardianship is difficult and costly, and much damage has been caused by the use of illegal traps and nets, particularly in Assiniboia and parts of Saskatchewan. In the western streams, trout are still extremely plentiful in the higher parts of the rivers but seem of late to have been driven from the lower stretches of water by the pike and suckers. No fishing for export has been carried on this season in the Prince Albert district. Fishing for sale in the summer does not show much sign of development, the difficulties of transporting the catch to market being too great.

BRITISH COLUMBIA.

Inspector John McNab reports that :—Salmon, halibut, sturgeon, and fish oil, are the only products of the fisheries proper that are exported from British Columbia, in sufficient quantities to make them of commercial importance, at the present time.

The pack of salmon in the Fraser River district is the smallest, since the season of 1892, or about 200,000 cases. The pack on the northern coast, and rivers, is a fair average one, reaching 248,400 cases, making a total of 448,400 cases, or 21,523,200 lbs. less than half the pack of 1897. In addition to which, there were shipped fresh, or cured by methods, other than canning 4,500,000 lbs. of salmon, making a grand total of 26,023,200 lbs., for the season.

The catch of halibut up to the end of the year will be in excess of that of any former year, but the catch of sturgeon will be less than that of last season. The rich and abundant variety of other fine food fishes which abound in the coast waters of British Columbia, are only caught in quantities sufficient to supply the local demand, the supply is unlimited, and with the rapid increase of population, and with the opening up of new markets, profitable employment will be given to a large number of fishermen.

CONCLUSION.

Three important matters appear to demand a brief mention in this report, viz : The decision of the Imperial Privy Council, London, upon the question of Dominion *versus*

Provincial Fishery Rights, and the foundation of a Marine Biological Laboratory in the Maritime Provinces, under the auspices of the Dominion Government, and with the cooperation, in management of the various universities, and the appointment of a special Lobster Commission to hold a series of sittings at various important points along the coasts of the Maritime Provinces. Arrangements were made for no less than sixty sittings and of these fifty-five have been held up to date. The Commissioners appointed by Order in Council, dated September 27, 1898, were:—

Professor E. E. Prince, Commissioner of Fisheries, Chairman.
Moses H. Nickerson, Clarke's Harbour, Nova Scotia.
William Whitman, Guysborough, Nova Scotia.
Donald Campbell, Margaree Forks, Nova Scotia.
Henry C. LeVatte, of Louisburg, Cape Breton.
Archibald Currie, Souris. Prince Edward Island.
Stephen E. Gallant, of Egmont Bay, Prince Edward Island.
Patrick J. Sweeney, Shediac, New Brunswick.
Robert Lindsay, of Gaspé, Province of Quebec.

Notwithstanding unprecedented bad weather, rendering the journeys of the Commissioners extremely difficult and unpleasant, the sittings with only one or two exceptions were held on the dates announced, and the witnesses, packers and fishermen attended willingly and at considerable personal hardship on account of the bad state of the roads and the continuous storms in November and December. A large mass of evidence was given, which will be discussed at a final meeting of the Commission, and a report and recommendations will be completed at an early date. The Lobster Commission aroused widespread interest as there has been no special inquiry of this nature since 1887 notwithstanding the vast growth and increased value of the Lobster Industry, and the difficulties and complications associated with its regulation and preservation.

The results of the decision regarding Federal and Provincial prerogatives in fishery matters are, it cannot be questioned, grave in their nature, and though the exclusive power to make fishery regulations is, it appears, undoubtedly vested in the Dominion, there are rights of a very important nature, which cannot any longer be exercised by the Federal Government. The issue of licenses for such fisheries as are defined to be the property of the Provinces and the collection of revenue therefrom passes from this Department, except in the case of Manitoba, the North-west Territories and certain fishing privileges on the sea coasts which are still matters of controversy. In the case of the Ontario fisheries the province of Ontario having declared itself prepared to take over the work of issuing licenses, collecting fees and enforcing the fishery regulations, the staff of fishery officers with three or four necessary exceptions was dispensed with and the work referred to has been taken up by a special Departmental branch under the Ontario Government in Toronto. The Province of Quebec has also taken some steps in the same direction. The other Provinces have not yet expressed themselves as prepared to take over the work which now legally belongs to them and a kind of tacit *modus vivendi* has been adopted, pending some final arrangement. A large amount of correspondence between this Department and the Provincial authorities ensued on the announcement of the decision, and there are many points which the decision still leaves in grave uncertainty. Any hasty or ill-considered steps might involve serious and permanent complications and no doubt mutual arrangements and concessions will reduce these matters to practical form. As the supreme jurisdiction in regard to fishery regulations still falls upon the Dominion Government, a thorough revision of all the existing fishery laws is in hand so that the Provinces may have clear knowledge as to the close seasons, gear, modes and manner of fishing which the Federal Government regard as necessary in the interests of the Dominion as a whole. The fishery laws and regulations of Canada, like the fishery legislations of almost all other countries, have been a slow growth rather than a well defined and compactly devised code. Amendments and additions to meet new needs and new conditions have formed so considerable a body of accretions that the original enactments have in many cases been completely transformed. To facilitate the enforcement of regulations formulated by the Dominion Government a clear and well-arranged code of Fishery Laws is absolutely necessary in order that the Provincial authorities may not be in doubt as to the application and meaning of these laws. It is not necessary to refer to the fisheries in relation to their international phases, as the fleet of Protection Cruisers, and such Dominion officers as appear necessary will continue to act with Dominion authority.

It has always been recognized that the interests of the fisheries are great and far-reaching and the supreme object of the Department in the past has been to protect, foster and encourage the legitimate utilization of the vast resources in the inland and maritime waters of Canada.

I have the honour to be, sir,
Your obedient servant,

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

SPECIAL APPENDED REPORTS

BY

PROFESSOR E. E. PRINCE

Dominion Commissioner of Fisheries

1. FLUCTUATIONS IN THE ABUNDANCE OF FISH
2. THE FOOD OF THE STURGEON
3. NOTES ON THE HABITS AND LIFE HISTORY OF CANADIAN SALMON

1898

SPECIAL APPENDED REPORTS

I

FLUCTUATIONS IN THE ABUNDANCE OF FISH

BY PROFESSOR PRINCE, COMMISSIONER OF FISHERIES, OTTAWA.

Fisheries, through all their history have been subject to characteristic fluctuations. Uncertainty in regard to the occurrence or disappearance of fish has long been proverbial. The miner is accustomed to surprises, sometimes favourable, sometimes unfavourable, and the farmer is rarely able, with any confidence, to foretell the results of his season's labours, but the fisherman surpasses all in the uncertainty which besets his efforts to utilize the valuable resources of the rivers and the sea. The abundance of fish on the one hand, or their scarcity on the other, have resulted in those strange fluctuations, abounding prosperity and indescribable depression, which have formed the most vexing of all problems for fishery authorities and scientific economists, while their explanation has taxed the ingenuity of practical men as sorely as professional theorists. In some instances, the causes of these fluctuations are apparent and readily discoverable, in others they are problematical and difficult; but in multitudes of cases it has, in the past, been deemed sufficient to have recourse simply to the supposed erratic movements and capricious habits of the fishes themselves. "The Irish coast," says an old writer, "affords a remarkable illustration of the capricious habits of fish, for which no satisfactory cause can be assigned. The haddock and whiting, which have not, for a long time, been seen on the western and northern shores have suddenly reappeared, and are again taken in considerable quantities." To attribute the reappearance, like the disappearance, of any species of fish to mere erratic tendency or whim is contrary to all that we know of fish life, as of other animal life, though so brilliant an authority as Dr. Pouchet has maintained that this is true of the sardine, as his distinguished *confrère* Professor A. F. Marion remarks: "Je crois pouvoir conclure que, pour lui, la sardine est une espèce absolument erratique, n'abordant que fortuitement, on ne sait sous quelle impulsion, vivant d'ordinaire dans la haute mer et jusqu'aux régions les plus éloignées des côtes, descendant aussi dans les abîmes océaniques, s'y reproduisant loin de l'action de l'homme et à des moments qui n'ont rien de régulier ou du moins sans subir l'influence de la succession normale des saisons."

Hardly less difficult is the problem presented by the mackerel fishery in various countries. Take the mackerel season just closed, 1898. As one authority has pointed out: "It was a failure from the start. That is not only true of the American mackerel fisheries, but also true of the Irish and Norwegian industry. As we have frequently said, the fish crop is like the wheat crop or the apple crop; one year it is good and the next it is poor, the only difference being that we understand the conditions which make or mar a crop of wheat or apples a little better than we do the conditions that produce a good or a poor season's fishing. The total catch, including what was landed fresh at

New York and other points during the spring fishing, and at Gloucester, Newport and Boston and other New England ports during the summer, was scarcely above seventeen thousand barrels. Not more than a half-dozen of the seventy vessels that have comprised the Gloucester fleet have had a remunerative year's work. The majority have lost money. The loss falls upon men and owners alike." The phenomena of nature are only capricious and inexplicable to the ignorant, and many facts which appear irregular and abnormal to the ordinary observer, are, to the man of science, regular and necessary, and belong to a recognized order, being subject to known laws and conditions.

The study of fisheries, as a department of exact research, has been one of the last to be taken up by trained scientists, and as yet the progress made cannot, perhaps, be compared to that in other lines, such as forestry, mining, or agriculture, yet the patient and arduous labours of fishery experts in various countries have yielded most remarkable and far-reaching results. In some cases, our ideas on fishery matters have been revolutionized, and certainly many common opinions prevalent amongst fishermen regarding such questions as the spawn of fishes and the habits of the young have been entirely overturned. The causes of abundance, or of depletion, are causes which may be complex or simple, but they are causes which investigations, conducted by competent authorities, can ascertain and elucidate. The confusion in the minds of those engaged in the fisheries arises less from lack of observation than of that power of discrimination which is a result of rigid technical training. It needs only an ordinary power of observation to note a multitude of possible causes for any phenomenon, but to eliminate the secondary and non-essential from the necessary and potent causative circumstances is beyond the common practical intelligence. A few years ago it was my duty to officially make inquiries into certain fisheries in the Bay of Fundy. The herring fishery, which had long been declining off the New Brunswick shore, came in for my special attention. I obtained a large amount of evidence from fishermen, very old and experienced men, many of them, but what struck me about the evidence and the proffered information was not the lack of observation or the absence of knowledge, but the superabundance of both. There was such a plethora of explanations for a single isolated fact, that any person except a fishery expert, would have been hopelessly dazzled by the excess of light thrown upon the simple problem. Why had the herring fishery in question declined? That was the question, and the local fishermen, all men of intelligence, observation and experience, offered no less than sixteen separate and distinct solutions of the problem. The reason most generally given was this: The herring fishery has fallen off because the young fish have been so seriously destroyed in the so-called sardine weirs. You cannot have abundance of adult fish if you decimate the young immature fish further down the bay. To illustrate the difficulty of sifting evidence of this nature, and to show how varied and even contradictory such evidence is, I give a brief statement of the explanations actually offered:

(1.) Young herring destroyed wholesale in sardine weirs.

(2.) Overfishing, especially by United States fishermen.

(3.) Driven off by increased steamboat traffic.

(4.) Too many drift nets have diverted the herring schools.

(5.) Shrimp food has disappeared, which attracted herring.

(6.) Mere caprice has caused them to leave.

(7.) Winds dislodged and cast ashore the herring spawn.

(8.) The sea bottom has changed, altering the bays and inshore grounds.

(9.) Pollution of the waters of the bay by vast quantities of surplus herring, captured and thrown away.

(10.) Deforestation of land increased the silt brought down by rivers in sudden floods, and smothered the spawn.

(11.) Saw-dust and factory pollution poisoned the waters.

(12.) Gurry rotting on the sea bottom after hake fishing is over.

(13.) Bad smell from offensive lobster bait drove away herring.

(14.) Phosphorescence of decayed bait in lobster traps frightened herring.

(15.) Disturbance of water due to constant hauling and sinking of lobster traps along the shore.

(16.) Long lines left by fishermen for two weeks to two months. As there is one hook to every fathom, and 400 to 600 hooks on a "trawl," quantities of hooked fish died and decayed and did the injury.

All these reasons—some of them most plausible and ingenious, and doubtless having a basis in fact, I grouped under two heads, and whichever of these two heads embraces the true explanation will enable a solution and remedy to be reached. The reasons put forth, no less than sixteen in number, imply that the herring, formerly plentiful, have been destroyed, and that the abundant schools no longer exist anywhere: or that they still exist but have been driven to other resorts and cannot, therefore, be taken along the Bay of Fundy shores of New Brunswick. This is, indeed, characteristic of all evidence offered upon the question of depletion. On the one hand, parties interested affirm that decline and gradual extermination is the true explanation while, on the other hand, it is claimed that the fish supposed to be reduced in numbers are really as plentiful as ever, but have migrated to other regions and cannot be found in such numbers, if at all, about their former haunts. It is true that in no department of natural history has accurate information been so meagre as in the science of fish and fisheries, for the customary habits and seasonal movements of the fish could only be accurately followed in the depths of the sea, and in more or less remote areas in rivers and lakes, under conditions of the most obscure and difficult character. When the Highlanders of Scotland fancied that the herring deserted a certain coast because, in some strife of the clans, blood had been shed, or when, as Dr. C. D. Badham related, the Celts, in an obscure parish in the west of Ireland, declared that the schools of herring departed when a new clergyman announced his intention of tithing the produce of the sea, and never showed any sign of their presence during his incumbency, these supposed explanations were not more baseless than many which have been formulated in the reports and conclusions of important fishery commissions. The causes of success or decline in any particular fishery may be natural and normal or they may be due directly or indirectly to human agency. They may arise from conditions of which the student of economics can take cognizance, or they may arise from conditions of a wholly different character, and may even be dependent upon the racial and social characteristics of the people. But while to such causes and conditions the rise and fall of fisheries may, in many instances, be attributed, the most momentous of all are those which are due directly to natural or biological conditions, so often complex and profound, but always capable of being investigated, with the hope of ultimate solution, like all other problems in the domain of nature. When a particular region, fresh water or marine, is unduly strained and the fishery resources seriously impaired by fishing operations pursued to excess, there must follow a depletion which may be permanent or only transitory. Thus, a large maritime population may become dependent mainly upon one particular fishery resource, and the natural limits of a healthy industry being overpassed, a period of depression, or even of total exhaustion, may supervene. Lobster and oyster fisheries in various countries are a striking example of this last-named type. The oyster and, indeed, the mussel fisheries of the British Islands have reached a state of such absolute unproductiveness that the markets can only be kept supplied, and that inadequately, by importations from other countries. That common shell-fish, the mussel, is the principal bait used by the line fishermen in Britain. 30,000 tons are required yearly by the Scottish fishermen, and for this supply dependence is largely placed upon importations from Holland and other countries. Oysters which, 50 or 60 years ago, sold for 30 cents to 40 cents per hundred, cannot be had now for less than $1.50 per hundred, and those of the poorest quality, while the best Whitstable oysters often sell at over ten dollar a hundred at the principal oyster stores. The shad fisheries in the maritime provinces of the Dominion furnish another notable case of depletion, due mainly, possibly due solely, to overfishing. It has been argued that in the case of the shad the decline of the fishery is due to pollution of its feeding grounds, and it has been maintained that the extensive flats in the upper portions of the Bay of Fundy abounded with the "shad-worm," a favourite food of the shad, but that saw-dust and other pollutions drifting down the streams of the adjoining counties (in Nova Scotia and New Brunswick) have covered these areas and destroyed the food. Certainly the Bay of Fundy shad formerly netted in immense quantities in the fall, were fat and well fed, and apparently schooled in those waters for feeding purposes. Those who maintain that the shad have forsaken these areas because of lack of food, have not been able to point out any other localities to which these fish now resort. Possibly there is good reason to attach weight to the contention stated above, though it cannot be ignored that excessive destruction of spawning shad took place in the spring up all the rivers emptying into the Bay of Fundy. Not only were the spawning fish mercilessly destroyed on entering the estuaries, but were slaughtered on the spawning grounds, and relentlessly pursued when poor and emaciated, and drifting down the stream, after depositing their eggs.

A decline in a fishery may prove to be due to causes deeper and more obscure than a simple decline in the supply of fish or exhaustion due to overfishing. The native character and natural aptitudes of the people may have something to do with the apparent abundance of fish and the state of their fisheries. Thus, a Select Committee of the British House of Commons, appointed in 1833, reported that the Channel fisheries off the south coast of England had been declining for nearly twenty years. The numbers of men and boats had continued to decrease, the fishermen and their families had become poorer and poorer, and had become dependent upon the parish-rates for support. The encroachments and competition of the French fishermen, aided by a substantial bounty from their Government, were claimed as the potent causes of the decline. In sea fisheries, it may often happen that a fishery which shows every sign of decay, if we have regard only to one nation, is really in a prosperous state if we take into account the extent and profitableness of the same industries pursued in the same seas by other countries. A remarkable case of this kind was illustrated by the famous bank fisheries of Newfoundland. The Newfoundland industry was in such a serious state of decline that there appeared a possibility of its total abandonment. The number of "banking" vessels declined from 330, in 1889, to 58, in 1894. The catches, which amounted to 236,821 quintals in the former year, fell to 53,824 quintals six years later, that is in 1894. So serious a falling off in an important national industry created justifiable alarm. An official investigation was authorized, but, as usual, the practical men engaged in the industry expressed the most contrary views. No less than fifty-nine separate reasons for the decline were volunteered by the owners and ex-owners of vessels and by the fishermen themselves, and it would be impossible to imagine causes more diverse and opposed than those alleged to have produced the decline. The actual scarcity of fish, or their different and more local method of schooling, the lack and the dearness of bait, the injury to the banks by offal and fish-waste, or by the periwinkle fishing carried on by the French, the inefficiency of the men and their want of navigation experience, their inefficient gear and ill-fitted vessels, extravagance in regard to ship's stores, and carelessness in keeping vessels and gear in proper trim, and hosts of other reasons, more or less remotely bearing upon the important matter at issue, were set forth as accounting for the decline of the industry. Some of the reasons practically amounted to a charge of incompetence and of idleness, while other causes adduced had reference to the weather, "natural disadvantages, such as fogs and gales," or to the proverbial "periods of plentifulness of fish, and periods of scarcity on the banks." None of the causes summarized above really touched the essential points which the commissioners referred to in framing their conclusions. Thus, it was shown that the large fleet of American bankers made on an average actually larger catches per boat than the Newfoundlanders, who were in closer proximity to the banks, and had local supplies of bait available. During the five years, 1889 to 1894, the United States boats exceeded the Newfoundland boats by about 122 quintals per vessel. The United States boats were larger and better, carried a rather larger crew, and used more gear, but had also the advantage of access to a great market, and the certainty of better prices. Success depends, said the commissioners, not only on good vessels and gear, but upon an experienced, industrious and economical skipper, and a well-managed zealous crew. "Once we have redeemed the errors of the past, a brighter future for the bank fishery will open," is the conclusion reached at the termination of the investigation. In other words, the bank fisheries, there is every reason to believe, are as prolific as ever, and any decline is due to causes which rest with the fishing population. The history of fisheries, in various parts of the world, clearly shows that this is true, and that fishing industries have declined on account of the inferior skill and industry and lack of perseverance on the part of those engaged in them, and this was clearly the cause of the decay of the British sea fisheries in the German Ocean during the seventeenth century, when the superior enterprise of the Dutch enabled them to gradually usurp the business which had hitherto been controlled by English fishermen. Until recently, the valuable and prolific fisheries of the west of Ireland were but little utilized by the resident population along those shores, and it was not until Scotch, Manx, English and French fishermen intruded into these waters that any appropriate local attempts to stay the decline of the Irish fisheries were made. Numerous cases might be cited where the inexperience, not to say indolence and indifference of the resident people have resulted in strangers and foreigners harvesting the rich treasures of the deep, which had long invited exploitation. In addition to the factors just referred to, factors which it is needless to say are extrinsic and readily remediable, there are others which have been revealed by the arduous labours of biologists and scientific fishery experts. These factors are intrinsic and involved in the preservation or disturbance of that balance of nature which is as real and tangible in the world of waters as upon the surface of the land. Whether or not the injuries arising from these causes are remediable is another question, but, at any rate, it is possible to decide whether restorative steps are feasible if once we are able to name the cause or causes.

It is well to premise that one of the most important conclusions reached by the investigations of experts in recent years is that all important fishes are local in their range. The old idea that fish migrated over great distances has been exploded. It is becoming more and more apparent that they affect their own local areas, and that such local areas can be exhausted more or less completely. Even fishes like the herring and mackerel are by no means the erratic wanderers which they were at one time thought to be. The movements of the schools are, indeed, mainly from deep water to shallow, and back again. The herring fishery on the east coast of Britain which was long thought to clearly establish the theory of extensive migrations from the North Pole (as Pennant said) to the more temperate waters of southern England and back again, is now seen to prove precisely the opposite. It is true that the herring fleet begin off the Orkneys and Shetlands early in the summer, and, month after month, move south, finding schools of herring at every successive point, until the fishery ends off the Norfolk coast in the fall, but, as every fisherman knows, the herring found in certain localities are peculiar to those localities, either in size, shape or flavour, and are clearly not merely members of one great army, moving southwards. Were it not so, local varieties of herring would be an impossibility. As one critic has remarked, were Pennant's theory of a vast school traversing thousands of miles of ocean a true explanation, it would be essential that this moving host should, at certain seasons, make a return migration to the polar seas, but such a northerly migration has never been observed. Were fishes of great economic importance thus nomadic, they would be independent to a large extent of local conditions, and would be little affected by circumstances potent over only limited areas, yet we know that the contrary is the fact, and that herring, mackerel, haddock and cod fisheries may be a marked success in one area and a failure in another and that these states of plenty or of depletion appear to be most erratic, whereas they should be widespread and gradual or uniform were the schools the common property, as it were, of an entire length of coast. The practised eye of the fisherman will distinguish, at a glance, a fish from a particular locality, especially of certain species. It is not difficult to relegate a St. John River salmon and one from the Miramichi and one from the Restigouche, to their respective waters after carefully comparing examples. Even the herring of the Scottish coast are in many cases easily distinguishable. A menhaden caught on the coast of Maine can, with facility, be disguished from a Long Island menhaden, a Chesapeake or a Florida one, by certain indescribable characters, easy to perceive, but difficult to define. The presence of the crustacean parasite in the mouths of southern menhaden, and its constant absence from those of the north, is a very strong argument in favour of local limitations in the range of menhaden schools. That the same schools of menhaden return year after year to the same feeding grounds is very probable. The schools in the southern waters do not receive any apparent increment at the time of the desertion of the northern coast, nor are the southern waters deserted at the time of the abundance in the north.

Most fish have their special local range. They loyally linger around their own native haunts, and only lack of food or some potent physical cause will induce them to change their ground. The late Professor Spencer Baird, in 1871, very clearly laid down the principle referred to, saying :

"In all discussions and considerations in regard to the sea fisheries, one important principle should be borne in mind, and that is that every fish that spawns on or near the shores has a definite relationship to a certain area of sea bottom; or, in other words, that as far as we can judge from experiment and observation, every fish returns as nearly as possible to its own birthplace to exercise the function of reproduction, and continues to do so, year by year, during the whole period of its existence. * * * It is an established fact that salmon, alewives and shad, both young and old, have been caught on certain spawning beds, and after being properly marked and allowed to escape, have been found to reappear in successive years in the same locality. * * * The principle is rather more difficult to establish in regard to marine fishes ; but experiments have been made by competent men on our coast and elsewhere, which prove the existence of the same general principle in relation to them."

The abundance of fish in a locality may, indeed, be maintained, and yet the statistics of the fishery for one season or for many may show a falling off. The causes may be seasonal or meteorological in many cases. Thus, the smelt which enter the principal rivers of New Brunswick and Nova Scotia in incredible numbers in the fall (November and December) and again in the early months of the year, remain in those rivers, moving in and out with the tide until the ice completely roofs over the water, but a fall of snow, darkening the ice, or the appearance of the full moon, will at once drive all the schools out into the sea again. The catch for any particular season may thus rise high or fall to the lowest level with the occurrence of transient changes of the nature referred to. Winds also have great influence. Last year, for instance, the great fall herring fishery of Norway was exceedingly disappointing and poor. The catch did not exceed 106,000 barrels, as compared with the previous season's record of 282,000 barrels. Those well acquainted with the fishery claim that this serious falling off did not arise from any diminution in the herring supply, but from the fact that the herring kept off shore from 35 to 40 English miles, and the weather was too rough to permit the ordinary herring craft to venture so far out. It is said that a German steamer followed the herring at that distance from shore, and made very good hauls of fine herring. In the spring of 1898 there were no cod off the south-west coast of Nova Scotia because, the fishermen affirmed, the herring had been driven away by the unfavourable winds that prevailed.

What, then, are some of the causes which reliable evidence shows have detrimentally affected fisheries. They may be grouped under eight or nine headings.

Overfishing.—This includes not only the employment of excessive quantities of gear, but the methods of using the gear and the kind of devices or engines employed. If, as fishery experts are agreed, excessive lengths of nets are used continuously in limited fishing areas so that whole schools of fish are captured and few or none are permitted to escape, depletion must rapidly ensue. While it must be admitted that the ocean, taken as a whole, is inexhaustible, yet established fisheries are confined to specially prolific areas, and such areas will bear the exhausting process of utilization only to a limited extent, or their reproductive and recuperative capacities will be too severely taxed. Nor does the exhaustion of an area leave space for the incoming of schools from other areas. Surrounding localities have their special schools too, local races they may be called, and, in accordance with hereditary instincts they remain true to their own areas, and under normal conditions have no reason to forsake such areas in order to repeople depleted areas more or less distant. Just as on the land, each area has its own insect fauna, and an entomologist can often determine the locality of a beetle or a butterfly by slight and subordinate local features, so there is every evidence for holding that local races of fish. even those regarded as nomadic and extremely migratory, cling to the limits in which they were born and reared. Not only of crustaceans, like the lobster and shrimp, whose movements are less active and erratic, but of fishes like mackerel and cod, able to traverse considerable distances, this is true, and generation after generation of these local races of fish linger around their accustomed haunts. Overfishing may be effected in many ways, but the principal are the too constant and uninterrupted pursuit of the fish so that when feeding and when engaged in spawning they are harried and destroyed without cessation : or the use for even short periods of time of apparatus excessive in amount or in destructive character. The decline and depletion of the Sacramento salmon fisheries on the Pacific coast of the United States was no doubt due to the latter cause. An excessive amount and extremely destructive forms of fishing gear were used for only a short period annually, and though the spawning fish in the upper waters were subject to no increased disturbance and the schools of salmon in the sea had uninterrupted course over their feeding grounds, as before, yet so completely were the migrating schools killed out when passing up the river that the fishery came to an end.

The great lakes of the North American continent, Ontario, Erie, Huron, Superior and Lake Winnipeg reveal the same unwelcome facts. Overfishing has effectually reduced the once wide-spreading schools of lake whitefish, lesser whitefish (called lake herring), and pickerel or doré, and great as the fisheries still are, they are unmistakeably depleted and decaying fisheries. Even species like the black bass, maskinonge and other valuable forms, never regarded as of prime commercial importance, are now scarce, where they were, 10 or 20 years ago, abundant. The vicinity of the Thousand Islands, the prolific stretches in and adjacent to the Bay of Quinté, and similar favoured resorts are largely bereft of the innumerable fishing population which once delighted the net-fisherman, and the sportsman with his hook and line. The angler, so-called, whose ambition was to make, in a day, a record catch, did much of the slaughter ; but illegal netting has been a grave factor, too. One of the ablest officers in the Dominion service reported some years ago that illegal trap-nets set in some depth of water, especially in the channels extending into Lake Huron, were decimating all the better kinds of fish. One trap-net contained, after being set only a few hours, no less than 500 pounds of black bass, besides lake whitefish, yellow pickerel, and other kinds. Some of these traps were large and most destructive, measuring fourteen feet in depth, and though prohibited by the Dominion Government, were extensively set in the waters of Georgian Bay and the North Channel, Lake Huron.

The history of lobster fisheries in most countries illustrates the same type of fishery destruction. It is true that new forms of traps have been invented more murderous and exterminating in effect than the old kinds of wickerwork lobster pots, or of oblong lath-traps ; but it has proved possible, by the use of these comparatively inoffensive forms of traps to almost absolutely clean out vast areas where lobsters were once incredibly abundant. The kind of trap remained the same, but the number used was increased five hundred fold, and this enormously increased amount of gear, used during a portion of the year only, achieved the same evil result. Ice on our own coasts and stormy weather in the fall and spring and the migration of the lobster schools into deeper water after spawning afforded some protection ; but these natural safeguards proved ineffectual against the influx of destructive agencies that were multiplied year by year. Of the valuable menhaden (a kind of large inferior herring) the late Professor Browne Goode said that it could not withstand the tremendous strain of overfishing. He said :

"It is the commonly received opinion that purse-net fishing is destined evidently to destroy all the menhaden in our waters. * * * The same may be said regarding pound-net fishing. It is doubtless true that the fisheries in a given locality may deplete the immediate region in which they are prosecuted. The cod and halibut may be fished for upon a single bank until the local supply is exhausted."

No doubt there is great truth in Professor Marion's claim that the explanation of the movements of migratory fish may be found, as he says in regard to the sardine, in two great impulses, hunger and reproduction : "La sardine," he says, "est, dans la Méditerranée comme dans l'océan, un poisson nomade, dont les déplacements doivent nécessairement être déterminés par les deux grandes causes qui régissent les actes de toutes les autres espèces, la recherche constante de la nourriture et les obligations temporaires du frai."

The history of oyster beds in most countries, with certain remarkable exceptions in the United States and in France, exemplifies exhaustion due to constant unremitting fishing without regard to ice, spawning, size or any other condition presented by the beds. Fishing for oysters through the ice is destructive on account of the waste it involves. Small oysters and spat brought up with the adult shell-fish are frozen in our climate, and to return them to the water dead would be of no benefit. Thousands of tons of immature oysters have thus been wilfully wasted, left to die and decay to the injury of the live beds below when the ice melts in spring. The marketing of small oysters in their first and second year has been most inimical, and car-loads of oysters are even now shipped west from the Atlantic coast of the Dominion which prove to be unsaleable on account of their insignificant size, and are dumped upon the waste heap in the cities of Ontario, Quebec and the west. Norway, so careful and wise in her utilization of many of her resources, has ruined her oyster fisheries by carelessness and reckless depletion, and annually yield only $2,000 or $3,000, though the molluscs readily sell at $10 per barrel.

Disturbance and Destruction of Spawning Schools.—There is no more pernicious method of fishing, as a rule, than that of capturing fish when in the act of spawning or immediately prior to it. Two remarkable exceptions occur, however, which constituted a somewhat difficult problem until fishery experts were able to offer a solution. These exceptions are the cod and herring, both fish being in most countries largely captured just about the spawning season when they are schooling in vast hordes in their accustomed breeding areas. Reference will be made to the peculiar and exceptional conditions connected with the two fish mentioned and there are others.

The decay of the mackerel fishery in the North Atlantic, and especially in the Gulf of St. Lawrence, can be traced to the use of most destructive gear precisely when the fish were schooling for spawning purposes. In spring and early summer an examination of specimens of schooling mackerel shows how near ripeness these myriads of fish are. When the eggs are perfectly translucent they are cast out in the surface waters of the open sea where they are fertilized and float for a week or two until the young fish are formed and burst out of the thin transparent shell. Every adult female mackerel produces not less than 750,000 eggs on an average and as the purse-seiners were able to inclose entire schools of these breeding fish, numbers of eggs beyond human computation were destroyed, and the mackerel population cut off more or less completely. Other methods of fishing, gill-nets, inshore traps, jigging, hook and line though formerly remunerative enough were comparatively harmless compared with the total and completely exterminating character of the purse-seine which was used out in the open sea precisely where the mackerel finds the appropriate conditions ; clear, rippling sea-water of some depth, absence of rocks, hurtful objects, pollutions, &c., access to sunlight and the necessary modicum of heat, all necessary for the incubation of these most delicate floating ova.

The disappearance of that small smelt-like salmonoid, the caplin, from considerable stretches of the coast of Canada may be attributed to destructive methods of capture. The cod regularly came close inshore along the Labrador and northern coasts of the maritime provinces, in order to feed on their favourite food the caplin. When the caplin no longer appeared the schools of cod disappeared too. Now, along the shores in question, especially along the estuary of the River St. Lawrence traps or weirs built of fine brush or wickerwork were placed at every available point. These became filled to excess with hosts of caplin which crowded in with the flowing tide, and were left high and dry when the tide receded. These valuable little fish were used for manure to some extent, but visits to these weirs or *pêches* showed that for one ton of dead fish thus utilized twenty tons were left to rot and waste away. Masses of decayed caplin several yards deep were thus piled up day by day, involving not merely the grossest and most criminal waste of fish, but the production of wide-spreading pollution in the neighbourhood and the cutting off of supplies of natural food which brought the valuable cod almost up to low water mark. So eager were the schools of cod in their quest for caplin that large fish were continually running on shore and were left stranded when the caplin were moving along. It may be added that the caplin came close inshore for the purpose of spawning as an examination of caplin from the Labrador coast showed.

A great run of cod, usually called the "caplin school" as a rule, touched the Labrador coast about the middle of June, near Natashquan, and moved east to disappear from the shore a month later. In 1898 no sign of this school was apparent, and the total absence of the caplin may be regarded as a sufficient explanation. Oddly enough the schools of caplin, which had been absent for many years at the Magdalen Islands, appeared in 1898 along the south shore, and the local fishermen regarded these as the north shore or Labrador caplin which had erratically forsaken their usual resorts. This is wholly improbable and it is far more likely that the conditions which were unfavourable for the incubation and hatching of the Labrador caplin (whether due to natural causes or to offal pollution, abnormal destruction and the like) were favourable on the Magdalen Islands and the fish once more became numerous there.

The gaspereaux (also known as alewives or kiacks) attracted the cod inshore in western Nova Scotia in a way similar to that of the caplin schools referred to, and the disappearance to a considerable extent of the cod from the littoral waters south of the Gut of Canso is no doubt largely due to the destruction of the gaspereaux, a destruction due to causes described on another page. The well-known case of the Dublin Bay haddocks doubtless comes under this category. In the early seventies the Dublin haddock schools disappeared for four or five years and all kinds of explanations were adduced, but the question of undue destruction of the spawning fish, or the loss of ova due to storms or other causes was not thought of. Some such unfavourable circumstances no doubt were the cause, for the haddock again appeared in numbers and the Dublin fishery resumed its former prosperity.

Natural Enemies.—The life of all fishes is a perpetual warfare with enemies, and the carnage of the sea apart from man's destructive operations exceeds that amongst the terrestrial tribes. The Royal Commission on British Fisheries, 1863, attempted to graphically picture this slaughter by natural enemies in the case of the herring. Allowing to one cod only two herring per day for seven months in the year, and assuming that an average fisherman takes not less than fifty cod in that time, it appears that the cod caught by the 40,000 or 50,000 Scottish fishermen if left in the water would have eaten more herring than the whole catch of the herring fleet. There were in 1861 40,000 tons of cod and ling taken in Scotland representing, say two millions and a half of codfishes and the calculation is easily made which establishes the contention that the herring fishermen take but a fraction of the fish which migrate along the shores, and are daily and hourly destroyed by predacious foes. Were not this destruction to continue "the population of the sea," as one writer has remarked, "would soon become so immense that, vast as it is, it would not suffice for its multitudinous inhabitants." An increase in the number of sharks and dogfishes in a particular area may have the most baneful results, entailing not merely the wholesale slaughter of valuable fish, but their dispersion and flight to other areas, and frequently extensive injury to the nets and other fishing gear. Over thirty years ago while mackerel were schooling in vast numbers in Massachusets Bay, great schools of blue fish, 16 to 20 pounds weight, suddenly made an incursion and devoured in quantity the smaller fish. The blue fish had been scarce for many years, and their unexpected advent had a most disastrous effect upon the mackerel fishery. Possibly a scarcity of food elsewhere had caused these larger fish to forage in this way.

The splendid fishing grounds off Grand Manan, N.B., deteriorated some years ago on account of the inroads made by sharks, dogfish, &c. An official report (1893) states the matter as follows :—

"The decrease in the cod catch has been gradual for the last ten years, which can only be attributed to the marvellous increase in the schools of dogfish and sharks in the Bay of Fundy.

"The hering fishery is one-third less than last year, not from a scarcity of herring, but from the manner in which they have been harassed by the dogfish, pollock and silver hake. Herring have been driven ashore by pollock and silver hake on many occasions. The weirs at Whitehead did not fish at regular times as in former years, that at 'weir times' the hake and pollock would rush through Cow Passage with a sound like Niagara Falls, and all the herring taken there were caught at times that the tide did not serve.

"The pollock have been so well fed by the herring that they did not take the hook, and this fact explains the decrease in the pollock catch."

Pernicious Chemical Influences.—Chief stress has been laid upon causes which are biological in their nature, but there are others purely chemical and physical. Of the purely chemical causes which control the appearance and movements of fishes one of the principal has been found to be the abundance or scarcity of oxygen mingled with the sea water. The absence of herrings from the Arctic seas has been frequently commented upon. The minute crustacean life which is so attractive, and so essential, it may be added, to the vast schools of herring, is extremely rich in the cold northern waters, yet herring do not appear to resort to those regions, whereas on both sides of the Atlantic the waters, adjacent to this continent and to the British Islands and the European continent, herring abound. The Atlantic is more richly oxygenated than the Arctic seas, and this comparative lack of oxygen is no doubt the main factor in deterring the herring from migrating thither. Experiment has clearly demonstrated the dependence upon temperature of the absorbtive power of sea water. Barometric pressure too is important in determining the amount of atmospheric air absorbed, and as this air loses its oxygen far more rapidly than its nitrogen in its descending passage to deeper strata of water, these deeper strata are of necessity imperfectly oxygenated, and unless disturbed by moving currents, unable to support the higher forms of animal life. As was shown by observations in the Swedish fisheries the presence or absence of the usual schools of certain fish was almost solely influenced by the greater or less amount of water rich in oxygen pouring into the Baltic Sea from the open ocean. Active migratory fishes, such as mackerel and herring, must be largely controlled by these conditions, especially in waters more or less inclosed or separated from the open oceanic areas.

That artificial chemical impurities directly affect fish-life has become almost axiomatic in the science of the fisheries, and many of the more delicately organized species no doubt succumb to pollutions poured from factories, gas works and the like. These pollutions, if they spread over spawning beds, or affect shallow areas which are the favourite resort of the delicate fry in the early stages of their existence, must be a far-reaching injury ; but actual observations appear to demonstrate the comparatively innocuous nature of such impurities so far as relates to robust and actively migratory fish like adult salmon. That a river like the Tay in Scotland should continue to hold its own as one of the most famous and prolific of salmon rivers, although Dundee, with its large population, pouring out the filth and waste associately with a busy and dirty industrial centre is but a few miles from its mouth ; and Perth, a city of nearly 40,000 inhabitants, with its dye works and other enterprises producing a vast amount of injurious impurities is only 30 miles from the estuary, demonstrates the resisting power which salmon trout have, physiologically speaking, in the midst of poisonous and hurtful surroundings.

The Aroostook River in the State of Maine, a tributary of the Canadian St. John River, still has its quota of salmon, although the pollution of St. John city, and the sawmill waste poured in all along the banks to Fredericton and up to Woodstock would seem sufficiently inimical, while in the Aroostook itself the abuses are if anything intensified not merely by the greater accumulations of debris, but by the erection of milldams apparently of an impassable character. The salmon are not to be daunted, and a few years ago after it had been commonly held that salmon had been wholly destroyed, fine examples were seen leaping near Houlton and migrated as far as Presqu'Isle. In the Canadian tributaries, like the Tobique, the conditions are wholly different as the primitive favourable conditions still obtain, and the salmon which reach these rivers find themselves in the midst of the congenial surroundings, remote from populous hives of industry.

Destructive Physical Causes.—Reference has already been made to unfavourable circumstances affecting fish-life which are of a physical rather than a chemical nature. The two are interwoven as a rule, but in themselves they are entirely distinct. Thus the floating saw-dust which will choke a shad, a gaspereau or other clupeoid whose branchial apparatus is provided with a cage of gill-rakers, will hardly have any evil effect upon a salmon or striped bass. A powerful fish like the sturgeon, however, is at once injuriously affected, but mainly on account of the fermented saw-dust lodged at the bottom, which not only is sucked in by the funnel mouth of the sturgeon when feeding on the bottom, but is most deadly in its effects upon the sand-shrimps, river mussels and shell-fish generally which so largely constitute the food of that fish. The decline of the herring and other fisheries in the Firth of Forth, Scotland, has been attributed to the hill drainage which has affected the specific gravity, purity, and temperature of the water so that the herring, especially, deserted this shallow estuary about forty years ago. Since then schools of herring come in for a short time, but not in their former immense numbers, showing that the physical conditions and possibly the food affected thereby are detrimental and drive the fish out again. Aquatic vegetation is, of course, affected, and the dependent animal life, of a microscopic character, perishes with the disappearance of plant life. All fish culturists are aware of the necessity of encouraging the growth of suitable water plants, on which minute water insects live and multiply, in order to fatten and keep in health the growing fish. In trout ponds is this especially necessary. It is the same in rivers, in lakes and in the sea. If the plant life be injuriously affected fish-life suffers too. What hope is there of the existence of fish in waters polluted by poisonous sewage, &c. ? The appalling state of things described in the following extract, and referring to the Kent River in the north of England, shows to what an extent these deadly agencies may poison and contaminate fine salmon and trout rivers: "Below the point where the refuse was discharged, the clean water from above and the filthy liquid from the sewers could be seen running side by side for several yards till they at length commingled, the result being a black turbid stream, on whose surface floated a scum formed of the lighter particles of filth and whose bottom was a dense black mud, thickest wherever an eddy or a pool facilitated precipitation, but always entirely covering the natural bed of the river. This sediment was exactly similar to the mud which had collected in the hollows. This state of things existed along the entire length of the channel of the river below the outlets referred to above." (From Mr. C. E. Fryers' Report, Salmon Fisheries, &c., of England, 1895.)

In his interesting account of that increasingly valuable fish, the sturgeon, the late Prof. Ryder pointed out that the very young stages subsist upon small animalculæ, which in turn live upon minute forms of plant life. Even the sturgeon are found to devour large quantities of small plants. "The story of the life of a sturgeon (as the author named pointed out) is seen to be bound up with the lives of vast myriads of organisms in no way related to it in the system, but only as sources of nutriment. It is quite certain that..................if the minute life upon which the young sturgeons subsist were exterminated, the sturgeon would also become extinct. It follows from this that whatever affects the relative abundance of the minute life of rivers and estuaries where sturgeons are found, must also affect the survival and abundance of the latter."

Reference has already been made to the effect of cold and barometric pressure upon the chemical contents of water in which fish live. The amount of oxygen dissolved may be reduced to a minimum by unfavourable physical conditions. It has long been known that herring as a rule make their appearance on the coast when the water is about 55° F. or rather 55·5° F., and on the east coast of England it was held that the Yarmouth schools only came in when the incoming stream from the Atlantic Ocean had swept round Sutherlandshire and joined the North Sea waters reducing the temperature of the east-coast waters to the desired 55½. So long as the temperature is higher so long the schools of herring remain in deeper water. The surface temperature has not, as was at one time thought, a direct influence on the movements of the herring though relatively warm currents appear to deter and relatively cold temperatures seem to attract the moving schools. The precise conditions involved under what may be called favourable and unfavourable physical circumstances in relation to the movement and distribution of fishes are too complex and numerous to detail here; but while temperature and the chemical results dependent thereon are of first importance the further physical character, viz., density is hardly less so. But density depends upon conditions chemical and thermal. If the incoming water from the Atlantic (reverting to the herring question in the North Sea) be of great density, a cold current and of considerable salinity, its admixture with the less saline and less dense water of the German Ocean will raise its temperature, and as observations have shown that about the middle of August 55½° F. is found to be the surface temperature—the temperature particularly favourable for the herring. As it progresses this colder bottom current is pictured as at every stage sending up columns which mingle with the warmer surface water, and in this way the schools of herring out in deeper water are attracted inshore, offshore winds prevailing, and great catches are made in the vicinity of the "patches of water welling up from the bottom." The fact that fishes, as a rule, possess an organ on each side of the body (the sensitive lateral line) enables us to understand how temperatures, densities and chemical changes profoundly affect them. But it must not be forgotten that it is these conditions, favourable for depositing and hatching the ova, as well as suitable for the microscopic animal life necessary for adults and young fish, that are vitally important. The regular migrations of fish as affected by physical and chemical conditions lose all their meaning unless their biological significance (food, propagation, &c.) be fully taken into account. We owe to Sars an ingenious explanation of the bearing of meteorological, current, and the temperature changes upon the abundance, not merely the presence or the movements but the numbers of herring which appear in a specified locality. The distribution of minute crustacea, especially copepods and decapod larvæ is regulated mainly by the weather and will differ indefinitely in successive years. The herring schools will linger where appropriate food abounds and those nearer the inshore waters will arrive in the littoral fishing grounds earlier than those schools further out in the sea. The movement coastward, which is annual, no doubt occurs in the open sea at about the same approximate date each season, some time before the roe and milt of the parent fish are attaining ripeness. Hence the early spring herring which are adjacent to abundant food and stay longer near the coast, are in better condition and of better quality than those that were more remote from this plentiful nutriment, and had a longer, more exhausting journey to make. The earlier fish, too, will be able to penetrate further into the fjords and sounds. In other words, the fishery will yield a much better, richer, and safer result than in the opposite case, when the herring only remains for a season near the outermost coast, and is much thinner and more exhausted, and when only occasionally a small school is chased near the land by large fishes of prey. The herring-fishery may therefore yield a very different result, even if the same mass of herrings has year after year been outside the coast and has produced the same quantity of young ones. The final cause of the irregularity in the spring-herring fisheries must therefore be sought in the changes of weather, current and temperature of the water in the outer sea, not so much during the fishing season as during the rest of the year, particularly during the preceding autumn and summer.

Whether there is in this respect a periodicity which corresponds with that of the herring-fishery will be more satisfactorily explained by future observations than by the study of the past. For the present, it cannot be denied that such a thing is possible. It is well known that salmon linger about the mouths of rivers until the temperature is favourable for their entrance. So long as the temperature of the water flowing out of the mouth of a salmon river is above 58° or below 38° the schools of fish are unwilling to ascend. The facts in regard to other fish are not so generally known, especially such a fish as the sturgeon, which is so abundant and of such value in Canadian waters. The late Prof. Ryder said of this fish: "The upward movements of the schools seem to be affected to some extent by a rise of the prevalent temperature of the water and air, thus making the fishing for the time more profitable. Conversely, a decline in the prevailing temperature is often apparently followed by a diminution in the numbers of fish on their way up the river, and a cold, late season retards the appearance of the fish from the salt waters farther south. A very rainy season, which has caused an unusually abundant flow of fresh water down the river, also interferes with their early appearance in the waters above Delaware City. This is supposed to be due to the fact that the water becomes fresh farther south than usual where the schools then remain to discharge their spawn. The fishing season at Delaware City is at its height during the months of May and June, but fish are caught during the summer and autumn and until as late as September and October."

When ultimately analysed we find that the abundance of fish, their migrations and the biological conditions upon which their well being and increase depend, above all the food supplies so essential to their existence, rest upon causes and circumstances which are largely physical.

Blasting, Loud Reports, &c.—Fishermen have in numberless cases attributed the disappearance of fish in waters adjacent to forts, &c., to loud reports and explosions. On the Berwickshire coast in Great Britain this idea prevails everywhere, and as the auditory organs of fishes are very sensitive and complicated there is some reasonable ground for these views. Certainly blasting operations under water have the most disastrous results, and two or three years ago a certain part of the St. Lawrence River appeared like a moving stream of dead and dying fish after some explosions of dynamite. On the Detroit River the noise and bustle of the shipping and traffic generally is regarded as responsible for the decay of the once prolific lake whitefish fisheries, though doubtless the garbage and noisome pollutions of Detroit City have had no less evil effects. Oddly enough certain fishermen along the sea coast of Quebec attribute the decrease in the lobsters in some of the bays to the noise of occasional steamboats, especially paddle boats, but the increase in lobster traps and the unlimited capture of spawning lobsters must have contributed to the exhaustion of the valuable crustacean in those localities. Perhaps the most novel of all reasons is that urged by old fishermen on the Delaware River to account for the scarcity of shad. They allege that the electric lights on the bridges terrify the schools of shad and cause the fish to disappear. The opposite effect might have been more easily anticipated, for bright lights as a rule have an attracting and fascinating influence upon most fishes.

The disappearance of the valuable tile-fish which for three years (1879-82) was very abundant on the north-east coasts of the United States, was attributed by some American authorities to volcanic causes. Almost in a single night this fine market fish was completely destroyed and the vessel, authorized by the U. S. Government to investigate this remarkable occurrence, found the sea for over 150 miles in a direct line crowded with the floating bodies of these dead fish. Between six and seven thousand square miles were covered by this wave of destruction, and the schools of tile-fish appear to have been entirely cleaned out of that region, though stray groups of them have been reported occasionally, though not to be compared with the millions that for the period named abounded in these waters.

Destruction of eggs or fry.—The eggs and fry of fishes are so delicate that in unfavourable seasons it is no matter of surprise to learn of their widespread destruction. We know that along the shores of Gloucester and Northumberland Counties herring-spawn is heaped up for miles after storms and is largely used for manure under such circumstances. In many salmon rivers a season of drought or an unusually severe spring may result in the death of vast quantities of eggs and alevins. In the Restigouche River some years ago sheets of ice floated down from the redds or spawning beds which were packed so densely with eggs as to appear quite orange-coloured. The ice had crushed down upon the eggs and gravel and lifted them in masses so that they were killed and carried down over a hundred miles to the sea. The phenomenal periods of plenty and of scarcity in the salmon rivers of British Columbia largely arise, there can be little doubt, from natural unfavourable conditions in the upper waters hundreds of miles away. A dry season and insufficient water on the spawning beds or a protracted season of cold in spring may effect widespread destruction of eggs and young fish ; but three or four years must elapse before this will be apparent. When the time arrives at which the schools of adult fish should ascend, had they not been so seriously destroyed at the head-waters when young, no ascending schools appear or a mere fragment of the expected schools, then the effect is apparent. The so-called cycles of plenty (four or five years it was generally thought) find their explanation in this way. Of course, over-netting, and the slaughter of fish by Indians must have their baneful results, but the seasons of abundance and scarcity, common to all the Pacific rivers, may be traced to unfavourable conditions prevailing during spawning or incubation of the eggs. Unless sufficient fry are hatched the usual runs of adult fish cannot be secured. Cod, haddock, mackerel and other fish whose spawn floats at the surface of the sea are peculiarly endangered. Ice, rain, surface pollutions, &c., must in some seasons destroy the eggs in countless quantities while the delicate fry, also in the surface waters for many weeks, are equally susceptible to these unfavourable conditions. There is no difficulty in explaining in this way many of the otherwise inexplicable cases of erratic decrease or total disappearance of such species of fish. Some authorities attribute the decline in the great lake fisheries, especially lake whitefish and herring, far less to overfishing than to the destruction of fry especially by the use of drag seines. These nets are used upon flat, smooth shores, free from stumps, boulders and debris, and it is precisely in the clear shallows along the lake shores that the schools of fry congregate. The net is, as it were, thrown around the fish within a short distance of shore, and is pulled to land. Before being hauled in both ends are secured on shore, and the net forms a complete inclosure, capturing everything within its sweep and extending in some cases as much as 1,000 feet, with 12 feet depth in the middle, though the dimensions are often less than these. Captures in the seine are of a very varied nature, and as the meshes are loose, and not usually fully open, as in a fixed net, like a pound, many fish are entangled which are of no value for market purposes. Young fish, included in this mixed catch, are mostly injured, and may be thrown ashore as useless. Further, the constant use of seines, sweeping over the shallows, has a very unfavourable effect on the shoals of small fish. They are disturbed in their migratory movements and driven into deeper water, where they are exposed to the attacks of larger fish. Indirectly, as well as directly, the schools of fry are injuriously affected. Professor Ramsay Wright, and other authorities with special knowledge of the inland waters of Canada, have described the capture of immature whitefish by herring seine-nets, and pointed out that the surplus fish are used as manure when the market is glutted. Similarly, Dr. H. M. Smith speaks of ground where whitefish formerly spawned in considerable numbers and, where the young now appear to congregate at times, on which quantities are taken for bait, measuring 1½ to 3 inches long. The fishermen when using the seine can hardly know the extent of injury they inflict ; for when very young, our valuable good fishes are transparent, minute, and almost invisible in the meshes of the net.

That valuable fry are thus disturbed, injured and destroyed, there can be no doubt. It is impossible to avoid this where seining is carried on. But the destruction of the young of inferior species, usually regarded as worthless, is most harmful. These small fishes, or minnows, are the favourite food of pike-perch or pickerel, salmon-trout and other predaceous fish. The abundance of these more valuable kinds depends largely on the abundance of smaller varieties on which they largely live. The term minnow applied to these small fishes is used indiscriminately and embraces nearly twenty species, including some of the more valuable food fishes.

As compared with the fixed pound-net, inshore, through the meshes of which the very small fry mentioned readily pass without injury, or again, with the gill-net hanging with fully extended meshes in deeper water, the seine is by far the most injurious from the point of view here considered.

It may be that the supply of whitefish would have fairly well withstood the drain of the net fishery had it not been that they were so seriously decimated in the young larval stages. Certainly the former abundance of whitefish in Lake Ontario is astonishing.

At present the lake is regarded as not a whitefish lake at all, the catch of over 620,000 pounds in 1870 had fallen to about 400,000 pounds in 1890 and in 1895 reached the low level of about 126,000 pounds. Yet 40 years ago on Wellington Beach at the east end of the lake, where whitefish are now exceedingly scarce, single hauls of nearly 500,000 large whitefish are recorded (viz., 400 barrels). At Burlington Beach in 1856, at the west end of Lake Ontario, the men netted 86,400 whitefish and nearly 2,000,000 lesser whitefish or lake herring.

At Port Credit, near Toronto, and other places, equally large catches were made, and the Superintendent of Fisheries for Upper Canada (Mr. John McCuaig) felt justified in 1859 in describing these fishery resources as "literally inexhaustible riches."

Lack of Food.—There is no doubt that the abundance or deficiency of food is most potent in affecting the movements of fishes. Scientific research has shown that each species of fish so far as ascertained lives upon special and peculiar food. Just as a lion requires a diet wholly different from that of a horse, and a squirrel would starve where the others would find abundant food, so the various fishes in rivers and sea live upon kinds of food which are wholly dissimilar. The mackerel prefers the small shrimp-like crustaceans, especially copepods and larval crustaceans which abound within a fathom or two of the surface of the open sea, the cod on the other hand seeks his food on the bottom or along the rocks and banks near shore so that small fishes, crabs, shell-fish, worms, zoophytes and other forms of bottom life are appropriate to his needs; while some of the flat-fishes, and species with massive crushing teeth, like the sea-wolf, prefer molluscs and sand-loving crabs and crustaceans. While it is in a vast number of cases easy to trace to the presence or absence of their special food the fluctuations in the abundance of certain fish, it is far less easy to account for the paucity or plenty in the occurrence of the animals which constitute the food. Many years ago some apparently unusual currents brought incalculable quantities of a small sessile-eyed crustacean to the eastern shores of Scotland. For some time the shores were clothed with these strangers, a small shrimp-like creature, unfamiliar to Scottish observers. At the time of this influx and while these interesting crustaceans were occupying some of my attention, my friend Dr. Fritjof Nansen, distinguished at that time as a brilliant young zoologist, prior to his winning fame as the intrepid hero of the Polar regions, being on a visit to Scotland at once identified the species as one found in peri-arctic waters and known on the coast of Norway. Doubtless some unusual disturbance of oceanic circulation had wafted these vast hosts of small shrimps from the north and no doubt attracted in their train quantities of northern fish. These erratic appearances of unfamiliar animals are related it can hardly be questioned to the converse disappearance of other animals upon which certain species of fish feed. The excessive drain upon the lobster supply in Dominion waters, and especially the relentless slaughter of spawning lobsters involving the loss of incalculable numbers of fry, just about to hatch, must have affected the characteristic surface fauna of the territorial waters. Areas like the waters immediately adjacent to Cape Sable and the neighbouring Nova Scotia shores, or the shallow stretches embraced in the Straits of Northumberland and around Prince Edward Island must at one time have been alive with larval lobsters swimming for more than a month in June or July, or even later, in the surface strata. There may be some basis for the contention that the schools of mackerel no longer come into certain of their accustomed resorts because this food supply consisting of young lobsters has been cut off. The excessive destruction of berried or seed lobsters must have vastly diminished the numbers of the swimming infant lobsters, and the decrease or disappearance of these would lead to the non-appearance of the feeding mackerel. While this may be so there appears far more reason to attribute the loss of the mackerel to the decimation of the adult fish when crowded together at the spawning period in the open sea. This extermination of food may be due, as pointed out, to natural causes or to artificial causes directly resulting from man's operations. Peculiar ground currents, excessive undertow, the grinding of the bases of ice-bergs and moving bodies of ice are known to wholly change the nature of the sea-bottom over extensive areas. Sand-banks and gravel become heaped up or strewn over a soft bottom, or a hary rocky ground: and sea-weeds as well as animals, indeed the entire flora and fauna may become suddenly changed. Such changes at once affect the schools of fish. At times changes of an analogus character are attributed to artificial or human agency. Thus the schools of splendid shad which once swarmed up the New Brunswick and Nova Scotia shores to the head of the Bay of Fundy in the fall are practically a thing of the past. Instead of catches of 3,000 to 5,000 barrels in Minas Basin and Chignecto Channel, at one time famous resorts, the quantity of fine fat shad taken in the late summer in the counties of Cumberland, Colchester and Hants barely reaches about 1,000 barrels. These shad, it is alleged, after having ascended the St. John River and other larger or smaller rivers pouring into the Bay of Fundy, and having gone through the exhausting process of spawning in the upper waters in early summer descended in an emaciated condition and made for the feeding grounds, the sandy flats and soft muddy areas in the open bay which extend up into Chignecto and Minas Channels. These sandy flats, it is affirmed, abounded with food peculiarly nutritious for the fish and they rapidly recuperated, and appeared in fat and perfect condition. Every river and stream, however, poured upon these feeding grounds, decayed saw-dust, mill-waste and pollutions so that the food, it is claimed, died off, the shad were no longer attracted as they once had been, and the autumn fish which were so prized and plentiful as a food commodity, have become scarce in the extreme.

It is extremely likely that the disappearance of mackerel from certain bays and coves along the coast east of Halifax, N.S., may be due, not as many suppose to the fouling of the water by mining pollutions, but to the destruction of the food which no doubt attracted in the schools. In such inshore and comparatively shallow bays it is improbable that the mackerel would spawn, indeed some of the finest schools were fall fish. As one local authority stated not long ago injury has arisen from the "tailings" resulting from the crushing operations in the quartz mills at the neighbouring gold mines. Mercury, dynamite, &c., were used, and the tailings and waste generally were carried out into the sea. This bay (the bay referred to is Salmon River Bay, St. Mary's Co., N.S.) was exceptionally good for mackerel, but they like pure water and for eight or nine miles out from shore the muddy pollution from the mines can be seen. Where there used to be five fathoms of water in the bay there are now not more than five feet, because of the deposits referred to and the accumulation of tailings. The crusher has been idle, however, and recently (October) there was quite a large body of mackerel, indeed several bodies of mackerel in the bay. The fishermen unfortunately were not prepared, and could not seine the fish which were moving towards western Nova Scotia.

Periodical or erratic times of food scarcity must of necessity occur, and even the Norwegian waters so prodigal of animals on which fishes feed are no exception, for the takes of codfish some seasons, while enormous as they proverbially are, realize far less value on account of their thin and poor condition than in normal seasons. The want of food explains their emaciation; but the causes for this scarcity of nourishment are more difficult to trace. The ill-fed condition of the fish directly affects the character of the liver and other organs, and this is seen in the decreased production of the fish oils which are of such great market value.

Dr. Fredrik Wallem has pointed out that "on an average 400 Lofoten codfish will give one barrel of liver, and two barrels of liver will give one barrel of medicinal cod-liver oil. But in seasons when the cod is of poor quality, as in 1882, 900 and even 1,200 codfish are required to yield one barrel of liver; and this liver itself was rather poor, so four barrels instead of two are required to make one barrel of medicinal cod-liver oil." In cases where appropriate food continues throughout the year a fish essentially nomadic like the herring may become strictly local and practically stationary for the year like the Loch Fyne herring of Scotland or the local varieties in the fjords of Norway. The absence of food is the negative force, while abundance of food is the positive force directing the movements of fishes, and the interesting details given by Prof. G. O. Sars may be here referred to. He points out that in exceptional cases, schools of herring remain in the deep fjords for a whole year and longer, and such herrings will naturally assume a character of their own, so as to pass for a special variety or coast-race. Although we know all the stages in the life of the herring near the coast of Norway, and would, therefore, reasonably suppose that its whole youth, till the period when it spawns for the first time, was spent near the coast, Sars remarks expressly that, on the whole, the occurrence of the summer-herring near the coast must be considered as altogether temporary. It comes, like the older herring, (the spring herring) from the open sea, but not from such a distance as this one. "Some time before the large masses of summer-herring came to Espevær, in 1873, the mackerel fishers often caught considerable quantities of large and fat summer-herrings in their nets at a distance of from five to six miles from the coast, and schools of large and small herrings could often be observed from the mackerel boats. Soon afterward the current, on account of a very sudden change in the weather, turned with unusual violence toward the islands near Espevær, and carried with it enormous quantities of small crustaceans, which were closely packed in all the neighbouring bays and sounds; then the herrings began to come in from the sea, first the larger and then the smaller ones." As during winter the small crustaceans are not found near the coast in such large quantities, the migration of the young herring toward the sea will, on the whole, be much less disturbed than during summer, and there are no instances of the spring-herring having returned to the coast to seek food after having spawned.

On the fishing banks of Cape Breton County, Nova Scotia, ten or twelve years ago fine halibut were extremely plentiful and then they mysteriously disappeared. As it did not appear that the fishery has been carried on to excess, local fishermen were in perplexity as to the cause. Recently, 1898, the halibut have reappeared, and the defunct fishery has been resumed with vigour. Some temporary change in the surface of the banks on which the halibut feed no doubt accounts for the disappearance, or the exhaustion of the food itself, which has had time to restore itself in the intervening period. The molluscs, annelids, &c., upon which the fish feed may have been covered over and smothered by sand, drifted by some unusually strong undercurrent, and this may now have resumed its normal level and condition, for the bottom of the sea in many places is thus alternately changed and restored. Now the area referred to is literally alive with fine halibut, 30 pounds to 150 or 200 pounds weight, and in the fall a remunerative fishery is carried on by the Canadian fishermen and by U. S. schooners. A reverse state of things is exhibited by the Cape Breton schools of mackerel which ten years ago, after a period of decline, appeared in all their former abundance. So abundant indeed in 1889 and 1890 that old fishermen declared they had seen nothing like it since their early days. Now the mackerel fishery has reached its lowest possible level and the schools have almost wholly disappeared.

The cases referred to in the foregoing pages include those more salient and probable, but the scarcity and total disappearance of fish may arise from other circumstances plain and apparent in some cases, but obscure and difficult to discover in other cases. The evils of obstructing schools of fish in their migration to their spawning grounds especially in rivers and lakes are apparent. Wharfs and mill-dams, walls of netting and accumulations of lumber and rubbish have destroyed salmon, alewives, striped bass and other fish, or caused them to seek wholly new resorts. The salmon nets off Charlotte County, New Brunswick, have, it is claimed, diverted whole schools of salmon from the New Brunswick shore and caused them to cross the Bay of Fundy and ascend the Nova Scotia rivers opening into the bay. This may or may not be so, though the increased catches of Nova Scotia salmon were coincident with their decrease in certain New Brunswick rivers and streams. The blocking of fine rivers by enterprising business firms is too prevalent an evil to demand special notice.

II

THE FOOD OF THE STURGEON

BY PROF. E. E. PRINCE, DOMINION COMMISSIONER OF FISHERIES, OTTAWA.

There are few phases of fish life so little known generally as the feeding habits and peculiarities of the food of different species. Yet it is of the highest importance for a judicious administration of great fisheries which provide a means of livelihood, and are a source of food for the people, that the facts regarding the means of nourishment and the peculiar methods of obtaining it should be ascertained. Otherwise, regulations might be devised to protect one species, which would have the effect of exterminating another, and fishes of inoffensive feeding habits suffer from lack of proper safeguards, resulting in the destruction of an important fish supply.

One of the most common arguments urged by parties interested in extending any particular fishery is the claim that the particular kinds of fish specially referred to are injurious to others. By eradicating these particular kinds, it is argued, the remaining species will be encouraged and increased. Many fishermen hold the view that any fish which is predacious and feeds upon other fish should have no protection, either by close seasons, netting and mesh limitations, &c., but for the benefit of the fisheries generally should be decimated. As applied to the voracious cat-fishes, the wolf-like grass pikes and even the doré or pickerel the argument appears plausible enough, but it must be remembered that under undisturbed natural conditions, the predacious and inoffensive kinds have always inhabited the same waters and that the balance of life was duly maintained until man's operations came in as an interfering force. These operations were in the great lakes and inland waters of the Dominion generally, most actively directed against the lake whitefishes, the lesser whitefishes or lake herrings, &c., and the capture of these in immense quantities, especially at the spawning time, has undoubtedly left them at a serious disadvantage in the maintenance of their existence. Physically, and in habits and modes of life, less able to hold their own against the strong, active and voracious species, their disadvantages have been increased by the decimation of the parent fish, so that the numbers of young brood each season are wholly unequal to compensate for the double loss thus brought about. It is a general law, especially amongst fishes, that those species which are in danger on account of feeble powers of defence or because they are not endowed with adequate means of escape or weapons of offence, rely upon the multitudes of the young fry produced each season to withstand the drain upon their numbers. Hence, a knowledge of the breeding habits and the quantity and character of the fry is essential ; but as a preliminary step it is most necessary to have some accurate account of the food and methods of obtaining it in the case of every species of economic value. It is not sufficient merely to rely upon the statements of dealers and those engaged in fishing for a livelihood, for even in cases where the opinion may not be unduly biassed by self-interest, it is rarely based upon actual examination and observation. Hence, the charges almost universally made against the sturgeon that it is the most voracious of all fish-eating species, that it scours the spawning grounds of the great lake-trout, the whitefish, and every other kind of valuable market fish, sucking up the eggs with its tube-like mouth and scooping in whole schools of defenceless fry, demands serious attention. If the sturgeon be an arch offender of this character, and the most destructive of all our predacious fish, the question of adopting special protective regulations in order to increase its numbers requires grave deliberation. There are few fishes in our fluviatile and lake waters of greater market value. Its flesh is in great demand—

its ova, of which caviare is made, are eagerly sought after, and a number of other valuable products are obtained from the viscera and waste. Its protection on the ground of its high and increasing economic value appears desirable ; but if its extremely predacious and destructive habits be as so frequently alleged, the value of the other fisheries which the sturgeon (it is said) so seriously injures, the whitefish, lake-trout and other species, have a first claim to legislative attention. Dr. S. A. Forbes, in an interesting paper published some years ago (Illinois State Fish Commission Report, 1890) gave a general account of the food and feeding habits of fresh-water fishes, so far as his own researches had gone, and in his list of predacious or fish-eating kinds, including the pike, pickerel or doré, the large-mouthed black bass, channel cat and cat-fishes generally, the sturgeon is not included.

Perhaps the best account of the food of the sturgeon is that of the late Professor J. A. Ryder (Bulletin United States Fish Commission, 1888), for it gives information upon the subject from the early larval stages up to the adult. After the embryo has exhausted all the yolk, hanging like a sack from the under part of its body, it takes very small food, and probably up to the third month, when it first exhibits small conical teeth, it subsists upon minute plant forms, infusoria and animalculæ, as well as worms, microscopic shrimps, and the larvæ of water insects, rhizopods, diatoms, &c., which abound on the slimy bottoms of sloughs, creeks and estuaries, and are swallowed by the little sturgeon in quantities. Later, when between one and two inches long, minute teeth being present in the throat as well as upon the jaws, the stomach has been found to be crammed with small water-fleas or crustacean mites, though worms, insects and possibly fish larvæ constitute much of its food. Larger crustaceans, the shrimp-like isopods and amphipods, in addition to the foregoing microscopic organisms, when the sturgeon reaches the mature condition. Ryder found that its food is composed of larger organisms, though in his examination of the digestive organs he was struck with the very meagre débris or remains in the stomach or intestine, and the difficulty on this account of deciding what forms the principal elements in its dietary. In specimens entering rivers from the sea, shells of the common black mussel *(Mytilus)* occur, and remains of the large, deep-water species *(Modiola)*, commonly called the horse-mussel. Ryder concluded that shell-fish are largely devoured by the sturgeon. At Tampa Bay, Florida, Mr. Elkington observed (according to Ryder) that the sturgeon dig up the soft bottom with their snouts. During my numerous official tours as General Inspector of Fisheries for the Dominion, extending over most of the waters of Canada, I have made frequent inquiries respecting the food of the sturgeon. Published observations are very fragmentary and, with the exception of the late Professor Ryder's account, no systematic attempt to deal with this important subject seems to have been attemped. Dr. Hugh M. Smith justly observed in his account of the "Fisheries of Lake Ontario" (Bulletin, United States Fish Commission, volume X, 1890), that "while it is known that the sturgeon is a bottom-feeder, and that the shape of the mouth and the general anatomy must determine the character of its food, much yet remains to be learned concerning the food and habits of the fish." Professor Browne Goode pointed out (Fisheries of the United States, Section I., 1884, page 660) that the stomach resembles the gizzard-like organ of the menhaden and mullet, and is perfectly adapted for grinding molluscs. Milner, as quoted by the authority just mentioned, holds that it does not feed very extensively on the spawn of fishes, but subsists almost entirely on shell-fish in the lakes, principally gastropods, the thinner-shelled kinds of the genus *Physa, Planorbis* and *Valvata*, as well as *Lymnæa* and *Melantho*. The European sturgeon, as Parnell stated, consumes marine worms : "In the stomach of one from the Tay was found an entire specimen of the so-called sea-mouse *(Aphrodite aculeata)*" and he also noted, somewhat vaguely, that small fish and worms seem to be its principal food. Yarrel informs us that "the débris of crustaceans and half-digested pieces of fish, mixed with decaying vegetable matters and mud, have been found in the stomachs of sturgeons and their food is probably any soft animal or vegetable organisms that they find at the bottom." There is no evidence that I can find supporting the view that sturgeon are predacious or pursue and devour other fish, and the construction of the sucking mouth and its habit of grubbing along the bottom would be adverse to such a propensity. On the other hand, there are just as few observations in support of the theory that the sturgeon is addicted to consuming the spawn of other fishes, or decimating the young fry when hatched out. Perhaps the most prevalent opinion amongst fishermen and fish dealers is that the sturgeon is a spawn destroyer. A large Detroit fish merchant once assured me that he had seen several gallons of spawn which had been swallowed, taken from a sturgeon, and he considered that it was a fish entitled to no protection whatever on account of this evil habit. The view is very widespread that fishes' eggs and newly-hatched fry form a considerable part of its food. "Experience goes to prove," to quote from a published statement on the subject, "that sturgeon feed almost exclusively on the eggs of other fish." Were this very prevalent opinion supported by reliable observations, and therefore well founded, the wisdom of protecting this fish in waters abounding in non-predacious and valuable species would be open to question. As a matter of fact, excepting in Manitoba and the North-west Territories, where sturgeon are of such vital importance for the sustenance of the Indians—"It is to us Indians," a Blackfoot hunter is recorded to have said, "in the water, what the buffalo was on land," and excepting in British Columbia, no special code of protective regulations has been formulated in Canada. In New Brunswick, in connection with the depleted St. John River sturgeon fishery special rules have been enforced. But in view of the uncertainty as to the facts of the alleged destructiveness of the sturgeon, very strict protective legislation has not been carried out.

It is very evident from the structure of the sturgeon's mouth that the fish is powerless to capture very active prey. There are no movable jaws for seizing and, in the adult, no teeth for tearing it. The mouth is protrusible, in the form of a flexible telescopic tube, and, like a hog's snout, is suitable for turning up the soft mud at the bottom of the water. Just in front of the mouth are four slender feelers which assist in the grovelling operation. Fishermen are well aware that it is not necessary to use any bait in order to catch sturgeon, and in some rivers a "trawl" has been used, consisting of a series of strong sharp hooks fastened at intervals along a stout rope. The rope is stretched across the bed of the river, and so intent are the fish in the "grubbing operations, that they press upon the trawl with all their force and are pierced by the sharp hook. Many sturgeon also are netted; but when feeding, it seems to be demonstrated that the fish glide over the bottom, protruding the long mouth, like a trunk, and sucking up the mud and nutriment upon which they mainly subsist. The strongly muscular character of the stomach, and its large capacity, even when compared with the large size attained by the fish, all indicate that food so easily comminuted and digested as the fry of fishes or their spawn, does not form a large part, if any part of the food of this fish. There are, indeed, difficulties in crediting the common allegation, arising from the fact that the fish usually stated to suffer from the depredations of the sturgeon spawn in localities, not as a rule, frequented by that fish. Thus, in the great lakes the whitefish always spawn upon hard grounds. They especially prefer rocky reefs and shoals, much waterworn and full of crevices and jagged edges. In some waters, as in Lake Erie, there are areas of honey-combed rock, or plateaus of deeply eroded limestone, which are famous as the resort for great bodies of whitefish, and probably other species. The depth over these reefs varies from 4 feet to 20 feet, and neither the depth nor the character of the bottom is favourable to the movements of the sturgeon. Its slow, heavy, grovelling movements are such that on jagged, water-worn surfaces it would suffer serious injury; and a soft muddy bottom, such as is found in deep channels and in slow running estuaries and creeks forms the usual haunts of the sturgeon. I have had the opportunity of examining sturgeon from the extreme eastern and western waters of the Dominion, and in none of the specimens were found any evidences which bore out the common opinion that the sturgeon is a devourer of spawn. It is true that some sturgeon sent to Ottawa for my examination from British Columbia were found, to my surprise, to contain large quantities of a small, smelt-like fish the Oolăchan or candle-fish *(Thaleichthys richardsonii)*. One specimen, a male sturgeon, 71 inches long, contained thirty Oolachan, each 5 or 6 inches in length, and the other specimens were quite distended with these small fish. Possibly these fish were ascending from the sea in such numbers that they could not escape the suctorial jaws of the cumbersome sturgeon, or it may be that they were sickly or dying fish, perhaps captured fish thrown overboard dead by some fishermen who had more than they required, and thus they might fall an easy prey to the far from predacious sturgeon. Lying at the bottom in masses, the sturgeon would devour them greedily, sucking them up without difficulty. So vast are the quantities of this fish in early spring in some of the Pacific rivers that they often form solid masses, working their way slowly into the river. It appears in immense shoals, and is caught either with the scoop-net, or, like the herring on the sea-board, with the rake. This simple device is merely a long light pole, flattened in one direction so as to pass readily through the water and with the edge set towards the lower extremity with a row of sharply pointed teeth The fisherman, entering the shoal, passes the implement repeatedly through the water with a rapid stroke, each time transfixing several fish. Thus a copious supply is soon secured. The Oolâchan is, in the estimation of most people, one of the most delicious products of the sea. Smaller than the herring, it is of a far more delicate flavour ; and so rich that, when dried, it is inflammable. This fish is not confined to Fraser River, but frequents, likewise, the Nass, a large stream issuing in the extreme north of British Columbia ; another stream debouching into Gardner's Canal ; and probably other rivers along the coast. Those caught at the mouth of the Nass are of a quality even richer than those of Fraser River. The natives, who assemble there in great numbers in spring to prosecute the fishery, besides drying them in large quantities, extract from the surplus a fine oil, which is highly prized by them as a luxury, and forms a staple article of barter with the interior tribes. This oil, of a whitish colour, and approaching to the consistence of thin lard, is regarded by those who are acquainted with its properties, as equally efficacious with the cod-liver oil so commonly prescribed ; and it is said to have the great advantage of being far more palatable. If the Indian with his simple apparatus can make considerable catches, there is little difficulty in conceiving how the sturgeon could secure ample food supplies, where the water around him was simply a moving mass of these delicious fish. The sturgeon were examined about the middle of May, and it has been noticed that the Pacific sturgeon usually ascends the rivers at the time the Oolâchan run commences.

I have also had the opportunity of examining specimens of sturgeon from the River St. John, N.B., where, at one time, an extensive sturgeon fishery was carried on. Operations of too destructive and unlimited a character resulted in the almost total extermination of this important species in the river in question. In the specimens examined in the River St. John, there were no traces of fish remains whatever, although the shallows were crowded with newly-hatched, defenceless gaspereaux, shad, and other clupeoids. Most of the spawn of these last-named fish must have hatched out by the middle of June, yet, judging from the minute size of the fry, quantities of fish ova must still have been lying on the spawning beds of the Washademoak, and the shallows near Gagetown, Sunbury County. Apart, however, from a quantity of mud and masticated vegetable ooze, in which unicellular algæ were plentiful, the capacious stomach was loaded with fresh-water mollusca. The shells, in a large number of cases, were almost perfect, except that the periostracum was digested off, but the larger shells had undergone some trituration, and the lip was lacking. A vast number of opercula, showing the spiral structure in the semi-transparent horny matter, occurred in the mud, and consisted chiefly of vegetable matter, but no characteristic structure could be made out, so that its real nature was uncertain. Probably it consisted of leaves and stems of aquatic plants, much triturated, and here and there the silicious tests of diatoms, desmids and other lowly plants appeared. The specimens were captured and examined about the middle of June, and as I was much engaged at the time with other departmental duties I was assisted in the determination of the contents of the stomachs examined by Mr. Andrew Halkett, of the Department of Marine and Fisheries, a zealous and gifted observer who has devoted much attention to the study of mollusca and other branches of zoology. Some of the specimens being partly triturated, there was a little uncertainty in their determination ; but this doubt exists only in the cases of *Amnicola limosa* and *Sphærium triatinum*. In all, there were no less than eleven species of shells amongst the contents of the sturgeon's stomachs from St. John River, viz :—

Planorbis parvus, Say.
Planorbis bicarinatus, Say.
Planorbis campanulatus, Say.
Limnaea catascopium, Say.
Amnicola limosa ?
Amnicola porata.
Campeloma desisum, Young.
Valvata tricarinata, Say.
Valvata sincera, Say.
Sphærium (Cyclas) triatinum ?, Lamk.
Pisidium abditum, Haldeman.

Taking into consideration the fact that the sturgeons examined had been feeding in the close neighbourhood of the spawning beds of the anadromous fishes (the shad, gaspereaux, &c.), which ascend to deposit their eggs in well-known regions near the Washademoak, Grand Lake, &c., it was anticipated that portions of the egg-capsules of the species referred to, would have occurred in the food or that portions of larval fishes, which crowded the shallows, would have been present. The food, which was abundant, consisted solely of shell-fish and vegetable matter, with a few scattered unicellular algæ. A more prolonged investigation and the examination of the food contents in the stomachs of a large series of sturgeons would show, there is much ground for thinking, that the rapacious character commonly attributed to the sturgeon is not justifiable. The present limited study, so far as it goes, is conclusive enough, for no trace of eggs or fry was perceptible under the most minute and patient examination. In view of the existing system of planting fry of salmonoids and other valuable fish, and of the precautions for protecting parent fish and their spawning beds, such a conclusion is of some value, and it indicates the probability that the sturgeon is not to be credited with the predacious propensity and evil character so commonly attributed to it. Fish merchants and fishermen desirous, at all costs, of extensively pursuing the sturgeon fishery, and using the argument that in exterminating this valuable fish benefit must result to other fisheries, have no reliable evidence so far to support their contention. Their view may have some ground in fact, but the depletion of sturgeon in many well-known waters has not sensibly resulted in a great increase in other fishes to which the sturgeon was specially thought to be inimical. Wherever the sturgeon fishery has been actively prosecuted, the supply has been rapidly depleted, and extensive destructive operations inevitably end in this result, as the fish are specially sought after when loaded with the ripe spawn, from which caviare is made, and the immature sturgeon are caught ruthlessly on account of the value of their flesh, and the waste products from which isinglass is made. As has been already pointed out, the famous St. John River sturgeon fishery rapidly succumbed, the abundant schools which were found in the great lakes, and especially the numbers found in the Detroit River and St. Clair waters have seriously declined. In Georgian Bay, sturgeon were so plentiful that they were a nuisance in the nets, and in Lake Superior the fishery forms now a wholly inconspicuous element in the western fisheries. In Lake of the Woods the sturgeon fishery has been carried on vigorously for not more than four or five years, and it is generally admitted that the manner and extent of the fishing operations are such that it cannot long withstand the heavy strain now put upon it. In British Columbia, the sturgeon of the Fraser River have grown to importance, but overfishing, especially in the Pitt Lake waters has resulted in a sudden and serious sturgeon is of prime importance in deciding what legislative steps are necessary, in view of these serious results.

III

NOTES ON THE HABITS AND LIFE HISTORY OF CANADIAN SALMON

BY PROFESSOR E. E. PRINCE, DOMINION COMMISSIONER OF FISHERIES, OTTAWA.

Of all the finny dwellers in our waters the true salmon *(Salmo salar*, L..) is perhaps the best known and most highly esteemed. In symmetry of form, in brilliance of silvery armour, in dash and vigour of movement, in strength and quality of "fight," and above all in the supreme esculent qualities of his richly tinted flesh, the true salmon has no peer. According to old English law the salmon along with the whale and sturgeon ranked as "Royal fish," and by common consent the salmon's title to that pre-eminence remains undisputed. The indomitable perseverance exhibited in his arduous migrations, the choice, which the salmon unfailingly makes of the purest and noblest rivers, and, again, the value from an economic point of view of the salmon as a food product add to his claim to be regarded as the "King of fishes." The Dominion, traversed as it is by some of the coldest, clearest and most majestic rivers in the world, is *par excellence* the chosen home of the salmon. It may be doubted whether there are any salmon rivers in the world to compare in most respects with the Restigouche, the Miramichi, the St. John and a score of others, famous in the annals of sport. So much has been written about the salmon and allied salmonidæ that the treatises if collected together would form an extensive library. Yet a condensed and accurate account of the true salmon, and of valuable allied forms is not generally available, and the following notes aim to supply the want and to embody all the most recent knowledge respecting the salmon and the salmonidæ generally.

The family salmonidæ embraces fresh water and salt water species some occurring at great depths of the sea like *Bathylagus* and brought up from 2,000 fathoms depth by H. M. S. "Challenger," others confined to comparatively shallow fresh water areas like the whitefish *(Coregonus clupeiformis)* of the great lakes, or seeking some depth in inland waters like the great lake trout *(Salvelinus namaycush)*. The grayling, at any rate one species, Back's grayling *(Thymallus signifer)* prefers the rippling streams of the Arctic and peri-Arctic regions, while others are equally at home in fresh or salt water like the true salmon, the smelt, the candle fish or Oolachan of the Pacific and the sea-run brook trouts. The smelt-like capelin prefers to linger within the limits of brackish water and of pure sea-water.

The old disputes as to the nature of the twelve-barred parr, the view that grilse or salmon peal are really a small but distinct species of salmon and the like, are settled for ever; but authorities still wage hot controversy upon vital points in the salmon's life history and indisputably show that the interest attached to the habits of this fish from the early infant stage onward is perennial. The questions still discussed include such as the following:—"Do salmon feed in fresh water? Are salmon indifferent as to which rivers they ascend for spawning, or are they true to their own streams? Do salmon resort to the depths of the sea or do they merely remain in inshore waters?" Many of these questions, though still debated by anglers and sportsmen generally, have been decided definitely by scientific authorities, and in the succeeding pages the main facts in the wonderful life-history of the salmon and of allied forms, often confounded with the true salmon, will be briefly set forth so far as they have been established by exact investigation.

Notwithstanding the exalted position commonly accorded to the salmon principally on account of its fine qualities as a game fish and a food fish, there are some points in its structure and anatomy which are of a marked primitive and lowly character. In the lowest fishes the skull and much of the skeleton consists of gristle or cartilage, but as we rise in the scale of fish life we find that by deposits of lime in the soft cartilaginous material the skeleton becomes changed into dense white bone. Thus the skull and shoulder bones of a cod become changed into hard bone ; but in the salmon this change is only partially accomplished and much of the skull, the shoulder elements, &c., remain as soft cartilage. The position of the paired fins is primitive and while in many fishes the hind pair or ventral fins are placed far forward, as is the case with the haddock, the mackerel and the bass, in the salmon they retain their early position half way along the body. Other lowly features might be instanced, but the most remarkable and, to the naturalist, the most perplexing is the absence of oviducts in the female salmon. In the more highly organized fishes the eggs after being formed in the egg-glands or ovaries pass backward along a pair of tubes called oviducts and so find an outlet. In the lowest fishes there are no such tubes, but the eggs drop from the ovaries when ripe and roll along the abdominal chamber till they find exit. The salmon is exactly like the lamprey in this primitive, or as some think, this degraded feature.

Regarding the distribution of the salmon it may be said that of the rivers pouring directly into the waters of the Atlantic every one in Canada is a true salmon river. In a few cases it might be appropriate to speak of them as salmon rivers in the past tense, yet some waters like the tributaries of Lake Ontario, which are no longer resorted to by salmon in numbers or with regularity are still found to yield an occasional salmon. The Superintendent of Fisheries for Upper Canada described in his report for 1859 the capture of an extraordinary number of salmon at certain points along the lake. At Port Credit he said there were taken 470,000 fish in 1856, two-thirds of them being salmon. It is difficult to understand such a haul of salmon, for the mention of salmon trout (the great lake trout) in the same report shows that the two were not confused as they frequently are in some parts of Ontario. Indeed even at that date salmon had seriously declined. Many of the streams running into Lake Ontario (he says) were once the resort of myriads of salmon (the salmon proper from the ocean). "I have seen them from 1812 to 1815, swarming the rivers so thickly, that they were thrown out with a shovel, and even with the hand. Now it is rare to see one in those same waters, and the question occurs, is it not possible to entice them back to their favourite haunts? One cannot but feel deeply at the loss—the calamity I may say,—which we have sustained in the destruction of these noble fish. After all the reckless and destructive agencies which have been used, the great numbers which are still found in some parts of the lakes show their vitality, and gives us the best guarantee that no very expensive means need be used for their preservation."

Just as the lobster has its northern limit so the salmon appear to cease as the rivers of the Arctic circle are approached. There is a common opinion even amongst fur-hunters and traders that salmon inhabit some of the rivers pouring into Hudson Bay, but long conversations with residents from Fort Churchill, Chesterfield Inlet, &c., who have lived upon the various rivers in question, have shown rather that the large salmon-like fish captured for food have been enormous sea-trout, or species of Salvelinus allied to the great lake trout. I have had the opportunity of examining specimens of these large salmonoids from the northern Labrador coast, and any examples of so-called salmon submitted to me proved to be recognized species of northern trout and not the true salmon. The true salmon appears to cease north of Hamilton Inlet, and is probably not found in the rivers of the district of Ungava.

The Atlantic salmon of Canada are identical with the salmon of the British Islands and northern European rivers, though minor local peculiarities are noticeable. The head is smaller and more acuminate and the body is more gracefully attenuated both in the shoulder and tail region in the British form. The Ouananiche, a land-locked salmon of Lake St. John and certain lakes bordering on the international line in the basin of the St. John River and the St. Croix River, is regarded by most authorities as a salmon which, as a rule, remains permanently in fresh water. It has ceased to descend to the sea, though anglers on the Saguenay River report occasional captures of these fish. The tail portion of the trunk of the fish is much lengthened and narrowed and the tail far more expanded proportionately than in the salmon, and it is forked. Some experts doubt the correctness of the common opinion that it is a land-locked variety at all, but the fact that smelt, sea-bass and the salmonoids readily become acclimatized to fresh water, and the example of the small speckled trout, which becomes so remarkably modified under changed conditions supports the common view regarding the ouananiche. The brook trout or speckled trout which migrate up the Nepigon River to and from Lake Superior, are notable for their large size and massive build, and still more the sea-run brook trout which become utterly transformed in shape, size and coloration show how vastly surroundings change the form and external features of familiar fish. The well known instance of the introduction of English river-trout into New Zealand is even more striking. Prior to 1867 there were no salmon or trout in New Zealand. There was but one insignificant salmonoid, an inferior kind of smelt. In 1864 the first batch of eggs reached New Zealand, but in October, 1868, a series of trout eggs sent from England in 1867 were hatched out at Otago and planted. In 1869 another shipment was taken to New Zealand, and many other shipments from the British Isles took place. Now, the trout of British streams rarely averages more than 1½ pounds to 2½ pounds—a 3-pound or 4-pound trout would be a rarity, though specimens have been reported of 15 pounds weight. As a rule 1-pound or 2-pound trout are considered by British anglers as mature well-grown fish. In New Zealand, however, most of the trout have gone down to the sea and have become sea-trout ranging from 10 pounds up to 25 pounds weight. In the small streams the trout still keep their normal coloration and show the usual deep-red spots, but as they grow larger the spots become fewer and finally disappear altogether. In snow rivers this takes place when the trout are one-half pound weight. The vast changes in size, shape and coloration seen in the English trout introduced into the waters of the Antipodes demonstrates the potency of environment.

Passing to the Pacific waters of the Dominion we find a wholly new group of salmonoids abounding there. With the exception of the steelhead and the black-spotted trout *(Salmo purpuratus)* which are close allies of the true salmon and the English river-trout, the so-called salmon of British Columbia are distinguished by many important features some of which especially the length of the anal fin, and the comparatively small scales are apparent at once to the ordinary observer, while the more abundant species are notable for their small size, though it is as a rule canned, one spring salmon being counted an equivalent for three sockeye salmon. The dog-salmon *(O. keta)* 10 or 12 to 20 pounds, is not an abundant fish, but its range is extensive as it occurs in all the rivers of the Pacific from the Sacramento to the waters of Alaska. It is the last to come in and appears at the end of September and runs to the middle of November. It is often marked by dark though indistinct transverse bars, and shows pale green patches about the gill covers and shoulders. Its flesh is stated by Dr. Bean to be of a beautiful red colour when it comes in, but it deteriorates rapidly. All the specimens which I examined in British Columbia were large, 15 pounds to 20 pounds, and the flesh was of a dirty white colour. The teeth were enormous curved instruments, white as ivory and very formidable. It is of no market value though used by certain tribes of Pacific Indians.

The other species worthy of reference in this brief sketch are the blue-back or sockeye salmon *(Oncorhynchus nerka)* which like all of the genus to which it belongs has 14 or 15 rays instead of the 9 or 10 rays of the true *Salmones*. Its weight ranges from 4 pounds to 10 pounds, though the latter weight is somewhat unusual. Its flesh is dry but firm and of a rich red colour, hence its value for canning purposes. A deep coloured salmon is more in demand in the canned-goods market than pale pink, or white flesh, for which indeed there is little or no demand. The sockeyes ascend the British Columbia rivers in countless myriads during July and August or even later and they are followed by another small species the Humpback salmon. The two kinds often overlap so that nets fished for sockeyes take numbers of humpbacks towards the close of the season. The humpback *(O. gorbuscha)* is a shapely fish on entering the estuaries. Its weight is 2 pounds to 5 pounds, and like other species the male becomes curiously malformed. The ridge along the back rises to a remarkable height while the jaws lengthen enormously. It ascends a comparatively short distance as a rule, and the change is more rapid and observable than it is in the case of the sockeye, the male of which also becomes grotesquely humpbacked. The flesh is white and the species has hitherto been little valued. The cohoe or silver salmon *(O. kisutch)* is an elegantly formed and from an economic point of view a superior fish, though the pink tint of its flesh is somewhat pale. Ten pounds to 15 pounds is the usual weight, though they grow to be 20 pounds or 30 pounds. They run very late, the early schools following close upon the last sockeye run, but the main run does not come in until October. The largest of all the Pacific salmon in the Quinnat, or spring salmon, ranging from 20 pounds up to 70 pounds or 80 pounds. They are also called Chinook salmon, and are characterized by a comparatively small head, deep body and large expanse of tail. Its flesh is pale pink, though white, and red and white-fleshed specimens are common, and its edible qualities could hardly be surpassed. On account of its unwieldy size and the pale colour as well as the uncertainty of the colour of the flesh, the quinnat is not especially prized by British Columbia canners, though it is nevertheless used. They haunt the inshore waters all through the winter and enter the rivers in March and April, continuing to come in in small schools all through the summer. The spring salmon is stated to ascend the Yukon for 1,500 miles, but it also resorts to spawning grounds much nearer the mouths of the rivers, as I have seen it spawning on a tributary of the Fraser not more than 120 or 130 miles from the sea. It has long been known that ordinary sea water has à very injurious effect upon the yolk which is so abundant in the eggs of all the salmon tribe. Professor McIntosh showed 30 years ago that in the young fry of Tay Salmon, the yolk becomes dense, and of the consistency of cartilage or Indian rubber when placed in sea water, hence the deposition of the salmon's eggs in the sea would involve their total loss. A recent Norse observer, Mr. O. Sagaard, has found by experiment that salmon can be hatched successfully if the salinity is 9 per cent strength ; but if stronger, or if weaker, say 2 per cent or 3 per cent, the results are as fatal as ordinary sea water. It is possible that some of the so-called salmon of the Pacific coast may spawn in brackish waters or so short a distance up river channels, or in coves and inlets where abundant fresh water pours down from the precipitous mountains adjacent, as to ensure a suitable admixture. In this connection the published observations of Messrs. A. B. Alexander and Scofield are of extreme interest. They show that the dispersive and the schooling habits of the young salmon fry vary with the conditions surrounding them. The observations further demonstrated that some run into salt water and that they probably go out at intervals in small schools. The movements of the fish in the streams are regulated primarily by the food supply, which in its turn may be affected by temperature or rains. When the food supply grows short, the young fish instinctively move down stream. In the fresh water they show no tendency to congregate in schools. Their numbers in any given locality are determined by how many the place will accommodate and give each an equal chance to secure its food. They prefer to scatter and shift for themselves. Young salmon in tide water, especially those in brackish water, seem to move in schools.

Certainly schools of small salmon fry 2 inches to 3 inches in length have been noticed in the Straits of Georgia in the month of June which had evidently just passed through the "parr" stage and had assumed a bright uniform silvery appearance and showed no indication of the transverse bars or "parr" marks. Now the true Atlantic salmon attains the size mentioned in about two months after hatching, say in June, but the "parr" marks may be retained for a year at least when the silvery exterior of the smolt is assumed. Hence the British Columbia species must much more rapidly pass through the various changes characteristic of the fry, and probably reach the mature stages in the half the time of the Atlantic species. If the recently published statement be reliable that a marked salmon, 24 pounds weight and 36 inches in length, had been taken in the fall of 1898, which there was evidence to show was one of a batch of small fry planted in the spring of 1897, then our ideas as to the growth of these fish must be entirely changed. It is *prima facie* improbable that a larval fish a fraction of an ounce in weight (the newly hatched salmon weighs the one-hundredth of an ounce) should reach in sixteen or eighteen months a weight of 24 pounds. Indeed I have a number of sockeye salmon fry in my possession which show twelve or thirteen "parr" stripes, though less distinctly than at an earlier stage and they are seven months old. They are from 2 inches to 3¼inches long and weigh barely 50 grains each (about ⅛ oz). At the same rate of growth they would reach 5 or 6 ozs. a year later, and that is the weight of a smolt 7 inches long at the time that it descends to the sea. Until the evidence is clearer and more convincing it is advisable therefore to adhere to the usual scientific opinion that a Pacific salmon as a rule does not reach a weight of 8 to 15 pounds in less than three years, but as it is in every sense full grown at that weight in the sockeye and other species, its development is far more rapid than that of the eastern species.

All the salmonidæ of whatever genus or species pass through recognized stages. All commence with the egg, which is deposited in clear rippling portions of rivers and streams where gravel and small stones abound and where the water is sufficiently shallow to ensure abundant aeration. The second stage is the "alevin," or newly hatched larva, a delicate worm-like condition, in which the large elongated bag of yolk on the under side, the prominent tinted eyes, the slender tail, and the continuous fin-membrane along the bag, are seen in all the species. Whatever differences there may be in minor details the life history of the eastern or Atlantic salmon is typical of the allied species in our eastern and western waters and it may be divided into eight separate stages.

(1.) The egg stage, in which the fish is as yet unformed. The egg is a spherical object not unlike a translucent pea about ¼ inch in diameter. It is of a marked reddish hue on account of globules of oily matter of a salmon tint which is scattered through the ball of fluid yolk. After fertilization the ball of fluid yolk, somewhat yellowish in appearance, separates into two parts, one the lower, shaped like a flattened disk is germinal protoplasm and is the real germ mass out of which the fish is built up, the other more bulky portion is the food-yolk, finely granular, and containing as already noted the reddish coloured globules of oleaginous matter. Each egg possesses a transparent shell or egg-capsule like a thin skin or envelope, which is very strong and resistent. The egg of a salmon will resist great pressure, some experiments showing that a weight of 5 pounds 6 oz. may be placed upon a salmon's egg before it can be crushed. The eggs are produced in quantity, about 900 eggs to the pound-weight of the parent fish. A 36-pound female salmon will deposit 30,000 eggs, and they grow so rapidly in the ovaries that whereas in early spring the eggs are only about 1 per cent of the total weight of the parent, yet in November when the eggs are nearly ripe and ready to be deposited, they exceed one-quarter the total weight of the female. The ripe eggs are deposited in batches. In 150 days under a temperature 34° to 36° the young embryo has been fully developed and is ready to emerge. One-quarter the time is occupied if the temperature is kept very high, say 97° Fahr. and in 90 days when it is 45°, while the period is 101 days at 43° Fahr. Towards the end of March and during the month of April the embryo salmon have so developed in the eggs that they are ready to burst out. The thin shell ruptures and there emerges a tiny and almost transparent creature, difficult to recognize as a fish at all, and too feeble to employ its mouth in obtaining subsistence. As a rule the young salmon lies upon its side and does not wander far, lying hidden amongst the yellow gravel and remarkable chiefly for the large somewhat lengthened bag of yolk hanging from its under side and directed backward. The reddish orange globules which are so conspicuous a feature in the egg, are still prominent in the yolk-sac of the newly hatched embryo, and they become grouped in masses at the upper side—next to the body of the fish. Red streaks passing across the yolk-sac indicate the blood vessels which pour their contents by the great vitelline vein in front into heart-chamber under the head of the fish. They are the vitelline veins, and they no doubt convey nutritious particles from the yolk into the body of the larval salmon and thus build up its frame. Frank Buckland noted that the heart beats at the rate of sixty pulsations a minute. Upon this bag of nutriment the little fish solely subsists for some weeks. At first it is ¾ inches long and about two grains in weight, but it grows rapidly at the expense of the yolk, which becomes more and more pointed behind, and may, as the late Sir J. G. Maitland observed, lose portions by pinching off. As Professor McIntosh noted the yolk if squeezed out into the water is transparent, viscous and tenacious, but soon acquires density like tallow, and the orange coloured globules usually sink to the bottom. The yolk-sac gradually shrinks, until it is seen only as a slight protuberance in front. The vitelline vein and other minor vessels begin to collapse and at the third week after hatching it is more than half gone, while during the fifth and sixth week, about the middle of May or later, it is seen only as a slight swelling. As the yolk-sac becomes less, the young fish acquires greater freedom of movement, and instead of lying amongst the pebbles upon its side, or by intruding the pendulous bag between two pebbles acquires an erect position, it can now shoot hither and thither through the water near the bottom. A couple of months after hatching the transparent feeble embryo has been changed into a silvery little fish, which by ordinary observers would be called a minnow with minute red spots and eight or ten dark patches upon each side. These bars or transverse patches are the "parr" marks and they persist until the salmon is ready to descend to the sea. This descent may take place about a year after hatching or it may be postponed until two or even three years, generally in the month of May or June. The mottled dress is lost and a uniform covering of bright silvery scales is acquired characteristic of the smolt. The silvery scalesh are very slightly attached and easily rubbed off, and the "parr" marks can generally be discerned underneath. The "parr" marks become indistinct and hidden under the newly developing silvery scales when the fish is 6 or 8 inches long. The smolt is 8 or 10 ounces in weight

In the sea, the smolt becomes a grilse or adolescent salmon, weighing from three to eight pounds, with rounder spots, thinner scales, more forked tail and more slender, graceful shape than even the adult fish.

"There is nothing in the water," says Norris, "that surpasses a grilse in its symmetrical beauty, its brilliancy, its agility, and its pluck. I have had one of four pounds to leap from the water ten times, and higher and further than a salmon. Woe to the angler who attempts, without giving line, to hold one of three pounds ; he does it at the risk of his casting line, or his agile opponent tears a piece from its jaw or snout in its desperate effort to escape."

Some grilse return within a few months (probably those that have remained the longer time in the "parr" stage in the upper waters), others do not come back for a year. It is extraordinary that the grilse should, in a few months, increase its weight eight or ten times, though a salmon liberated on January 16th, 1889, in Scotland was caught on the 3rd July following, having gained 10¼ pounds. Norris pointed out that smolts and grilse have been marked, and have gone to sea, and returned in six or eight weeks, while other grilse marked at Ballisodare, Ireland, did not return until 16 or 17 months had elapsed. During the summer months these ascending grilse are frequently found to show every signs of ripeness, both of milt and ova in European salmon, but, so far as ascertained on this continent, the male grilse alone is sexually mature. It is a curious fact that, while grilse appear to be rarely or never observed in some Canadian salmon rivers, yet in other rivers in the Dominion they abound. In certain seasons the Nepissiquit in New Brunswick has yielded to the rod far more grilse than adult salmon, anglers frequently taking over three hundred in the course of a week or ten days, when scarcely an adult salmon could be captured. Mr. C. G. Atkins, the well-known United States authority, has stated that grilse appear to be almost entirely absent from the United States salmon rivers, but this is certainly not usual with the rivers of Canada, and careful observers have noticed, even in British Columbia rivers, grilse ascending, although it has been denied that the Pacific species pass through a grilse stage. Mr. Ashdown Green has recorded his capture of a quinnat grilse, six pounds weight, in the Cowichan River, Vancouver Island, about 14 miles from the sea.

Professor Jordan also has recorded the presence of grilse in British Columbia rivers, and noted that they attain a mature reproductive condition at a very early stage. In Fraser River, in the fall, quinnat male grilse of every size, from eight inches upwards, pass up, the milt fully developed, but usually not showing the hooked jaws and dark colours of the older males. Females, less than 18 inches in length, are rare. All of either sex, large and small, then in the river, have the ovaries or milt developed. Little blue-backs or sockeyes of every size, down to six inches, are also found in the upper Columbia in the fall, with their organs of generation fully developed. Nineteen-twentieths of these young fish are males, and some of them have the hooked jaws and red colour of the old males.

The grilse which ascend in the late summer and in the fall, descend as grilse-kelts in the following spring. Some marked grilse-kelts were liberated by the Stormonthfield authorities and were recaptured on the ascent as mature salmon. When a weight of over eight pounds is attained, the fish is usually recognized as a salmon, a stage generally reached in the second ascent to the original spawning grounds. The cycloid scales in the adult salmon are found to be worn smooth over half of their surface, thus differing from the scales in the younger stages, when the whole scale is marked with a series of perfect concentric rings.

When the schools of salmon reach the estuary of a river they may remain only a few days, or it may be several weeks, playing about, before entering the channel of the river. This is commonly held to be for the purpose of acclimatizing the fish to their new fresh-water conditions. To quote from a well-known authority: "It first proceeds at its leisure to the head of tide-water. Here it stops awhile and seems to play about between the fresh and salt water. Whether it shrinks from encountering the sudden change from salt water to fresh, which is probably the cause of its dallying, or for other causes, it usually spends two weeks or more hovering about the border line between sea water and river water. When it has overcome its apparent repugnance to making the change to fresh water, it makes a rapid charge up the river for the clear gravelly streams which its instinct or sixth sense tells it to seek." It is also probable that the fish delay until a suitable temperature is reached. Curiously enough, when the schools have migrated some distance up the rivers, they will linger for long periods in pools, especially below falls and obstructions, during the time of the early runs of fish. Having attained the shallow areas suited for the "redds," in the upper waters, where proper conditions for depositing the spawn are provided, the pairing begins rarely earlier than the third or fourth week in October, and rarely later than the last week in November. The male salmon in all the various species undergoes remarkable bodily changes, while the female retains her normal appearance, except a deepening of the body, or enlargement, due to the growth of the ovaries and increased size of the eggs. The male Atlantic salmon, as Frank Buckland characteristically said, "wears a Joseph's coat of many colours, and the purple ground, variegated with sealing-wax red coloured spots on the side and cheek are very beautiful. * * * The hen salmon, on the contrary, wears a plain russet suit," though red spots are occasionally noticeable, and in both a golden orange tint appears on the sides. The lower jaw in the male becomes grotesquely lengthened. In the Pacific salmon, especialy the sockeye and the hump-back species, the back of the male enlarges and rises into a sharp, blade-like ridge, while the jaws are enormously lengthened, and the teeth are greatly increased in size and prominence. The male sockeye assumes a brilliant red colour on the sides and towards the dorsum, while patches of black and olive green also occur, and the elongated jaws are of a chalk-white colour. The Atlantic salmon energetically scoop out, in the gravel, deep hollows, in which the female places the eggs, afterwards covering them over, a process occupying a week or two and the parent fish then leave the buried eggs to take care of themselves and they hatch out in due course. The males fight a good deal, and the spawning grounds are the scene of much excitement and turmoil. This is as nothing compared with the commotion on the spawning grounds of the Pacific rivers, where the numbers of parent fish are incredibly vast. Thousands of male fish, with open jaws, rush about, carrying on the wildest warfare. In the chosen spawning grounds, as a rule a shallow tributary of some distant lake, the high-ridged backs of the males protrude above the surface of the stream, and the fish can be seen dashing in all directions at each other, inflicting severe and deadly wounds. Often two male fish become inextricably interlocked, like the red deer and moose in the forest and die miserably from wounds and starvation. The tails and fins become greatly worn, and scars and fungus disfigure their bodies. Some of the male fish become so soft and degenerate as to be almost putrid in odour and appearance. It does not appear that any real nest is made by the sockeye, hump-back and smaller Pacific salmon. When depositing her eggs, the female fish twists her body like an inverted letter U, in sidewise fashion, and the ripe eggs are extruded rapidly in batches. They fall promiscuously amongst the gravel, the rushing waters carrying them into interstices and secure hiding places. The fish, in the act of depositing the eggs, often is quite exposed above the surface of the water, while the male fish, close by, fertilizes them by actively scattering the milt over the eggs as they fall. Frequently, at the moment the eggs are thrown into the water, the male fish rushes away with open mouth and gleaming teeth to attack a rival. There must, in consequence, be enormous waste of ova. After the spawning is done, the emaciated fish drop gradually down from pool to pool on their return to the sea. These lean, black, degenerate fish are called "kelts," and, as Buckland says, they are "in a wretched and miserable condition, many dying on the road." In Scottish rivers, quite a large number of fish are found dead annually, the majority being male fish, the dead females being very much rarer; the record on one Scottish river showing that 71,000 dead salmon were found in 12 years. On account of the vastly greater number of individuals in the Pacific rivers, the dead fish observed, subsequent to the spawning period, is enormous and has given rise to the popular notion that none of them ever return to the sea alive. "Probably none of them ever return to the ocean, and a large proportion fail to spawn," said Professor Jordan. In this view many authorities agree, though the grounds for the opinion are not fully conclusive. Thus, an authority says of the Pacific salmon:

"They grow less comely in appearance, more slimy to the touch, more unsymmetrical in form; parasites collect by thousands in their gills and under their fins; their tails and fins fray off; a white and loathsome fungus gathers over all parts of them, frequently destroying their eyesight; and swarms of suckers—the carrion-birds among fishes—wait about them to feed upon their lifeless bodies when they die. For some unknown and strange reason, the salmon in the higher tributaries do not hasten back to the salt water, which would clean their bodies of the parasites and fungus and restore their appetite, and with it their health and vigour; but they linger, with a strange indifference to their fate, around the spots where they have deposited their eggs, waiting patiently for the only possible relief from their wretchedness, which is death. Some uninformed persons, who have never seen these fish in their natural habits, have expressed some incredulity in regard to their all dying after they have spawned.

The same authority goes on to say that it is probably true that those that spawn near the ocean return to the ocean and recover their vitality, but others never do. In order to make sure whether I was mistaken in my views about it, I took the testimony, a year ago, of all the white men who have lived or worked on the river, and of all the Indians I could reach. It was the unanimous testimony of all that 'the salmon which pass the McCloud station in the summer, on their way up the river to spawn, die in the river and never return to the ocean.'"

The fish, especially the female fish, in multitudes of cases, are full of vigour after spawning and quite capable of accomplishing the migration to the sea. Indeed, one of the ablest authorities in British Columbia, Mr. Ashdowne Green, of Victoria, B.C., says, "I have every reason to believe that some individuals do survive and even recuperate in the fresh water before returning to the sea. I have taken spent fish in the North Thompson that were strong enough to make a good fight. and I could see nothing to prevent these from returning. At one time it was supposed that no salmon ever did so, but of late this opinion seems to be much modified," especially, Mr. Green adds, with regard to the spring salmon, or quinnat. My own experience with regard to sockeyes and humpbacks would indicate that they do not by any means all die, they are, in a large number of cases, very vigorous, and when secured by hook and line, by being hooked in the ridge of the back, they exhibit extraordinary strength and gameness, though, of course, such fish will not take a hook in the ordinary way. It is difficult to imagine that even the smaller Pacific species make but one return journey to their native rivers, after making their first descent to the sea.

In ascending there are no obstacles which will deter the salmon, and their extraordinary leaps, 10 to 12 feet being a usual limit, are known to every one. Dr. A. Landmarks thinks that a 16-foot jump is possible if there be a deep pool immediately under the fall to be ascended. A recent observer, Dr. R. T. Morris, asserts that salmon can leap falls 18 feet high, and supports his declaration by published photographs. Salmon will certainly attempt to mount the most precipitous and forbidding falls and cascades. In ascending, the schools have been known to accomplish a distance of 40 miles in a day. Livingstone Stone estimates the rate in the Sacramento at two miles, and in the Columbia at three miles a day; but salmon, above tide-head, have been found with sea-fish undigested in their stomachs, and their rate of ascent must be vastly greater. The earlier runs appear to be most leisurely, and the fish appear, indeed, to regulate their rate of progress by the condition of the eggs in the ovaries. In their ascent, they practicaly eat nothing. Dr. Noel Paton's researches on Scottish salmon have shown that a peculiar degeneration of the walls of the stomach takes place, a "catarrh" it may be called, filling its chamber with a dense mucous mass, in which degenerate cells largely occur, and rendering the organ incapable of digestive functions. The same feature has been noticed in some of the fresh-water salmonoids *(Coregonus)*, the rigid condition of the stomach precluding the possibility of normal digestion. In the Pacific rivers it would, of course, be impossible for the migrating schools, on account of the vast numbers of fish composing them, to obtain any food in the ordinary sense, and the same physiological law applies to the schools of salmon in all rivers.

Some doubt has been thrown upon the generally accepted theory that salmon return to their own rivers. Certainly, on the two famous Canadian rivers, the Restigouche and the Miramichi, anglers and practical fishermen have always held that, though the rivers are practically adjacent, the schools belonging to one river never enter the other; indeed, the difference in size and general appearance is such that the men on the river distinguish them at once. This may be said to apply to rivers generally, the salmon of St. John River are unlike those of the Saguenay or Godbout, and none of them are identical in general appearance and build with those native to the rivers around the Bay of Chaleurs. Some accurate experiments in Scotland proved that salmon do, for the most part, return to their own rivers, and of 56 marked fish set free, 34 were afterwards caught ascending the same river, and the other 22 were taken in fixed tidal nets at distances of from half a mile to 500 miles from their native river. The Pacific salmon may not be so strictly true to this supposed instinct, and Professor Jordan lays little stress on it, but regards as somewhat accidental this supposed fidelity to its native stream. He says:

"It is the prevailing impression that the salmon have some special instinct which leads them to return to spawn in the same spawning grounds where they were originally hatched. We fail to find any evidence of this in the case of the Pacific coast salmon, and we do not believe it to be true. It seems more probable that the young salmon hatched in any river mostly remain in the ocean, within a radius of twenty, thirty, or forty miles of its mouth. These, in their movements about in the ocean, may come into contact with the cold waters of their parent rivers, or, perhaps, of any other river, at a considerable distance from the shore. In the case of the quinnat and the blue-back, their 'instinct' seems to lead them to ascend these fresh waters, and, in a majority of cases, these waters will be those in which the fishes in question were originally spawned. Later in the season, the growth of the reproductive organs leads them to approach the shore and search for fresh waters, and still the chances are that they may find the original stream."

Of the respective numbers of male and female fish which pass up during the season, some interesting facts have been observed. Thus, in the Penobscot River, Maine, U.S., out of 100 salmon examined, 34 were male and 66 were female, a proportion of the sexes which showed even greater disparity in the land-locked variety or Schoodic salmon, in which over 1,000 out of 1,604 specimens proved to be female, and the balance of 604 were males. In the Dominion hatcheries, the female salmon caught often exceed the male; but, on the other hand, in some years, as in 1893, there was large surplus of male fish. As a rule, the ova of three female fish may be fertilized by one ripe male. No doubt the proportions of the sexes vary according to the portion of the year in which the captures are made, as there are grounds for thinking that in the earliest runs the female fish predominate and the parent salmon taken for the Dominion Government hatcheries are usually what are termed "late" runs. In most rivers, salmon run almost the whole year through, yet the main runs are confined to definite months of the year, an unusual drought or some special condition in the season retarding or accelerating the ascent of these main runs. "In America," said Dr. Browne Goode," the southern streams seem to yield the earliest fish. In Connecticut they appear in April and May, in the Merrimac in May and June, in the Penobscot most abundantly in June and July, though some come as early as April." Rivers are known as early or late, not in allusion to the period of spawning, but to the early or late appearance in general of the main runs of salmon. The Tamar, between Devon and Cornwall, is, as might be expected, an early river, and the Tweed is a late river; but the rivers of the east coast of Britain are all early, while those pouring into the Atlantic are late.

The time at which spawning salmon approach their rivers is really a somewhat complicated one, and appears to depend very much upon local features in the respective rivers; but the periods, annual or otherwise, at which salmon return, or rather the interval elapsing between their descent and their next ascent, has been a matter for much discussion. Experiments in Norway clearly proved that some salmon spawn annually, but while the proof was not conclusive that all do not do so, the fact that in a series of marked fish 20 were caught in the first year following, whereas 30 were taken in the second year following, supports the experiments on the Penobscot River within certain limits.

Of the growth of salmon, there is much accurate information, though the records are somewhat scattered. As I have, in a previous report (Departmental Report, 1895, page xx.) pointed out, "it takes nearly 250 alevins to make up an ounce, yet in sixteen months a weight of two ounces is reached, and twenty months later, when, as a smolt, the fish seeks the sea and becomes, after twelve or fifteen weeks more, a grilse of seven pounds or eight pounds weight *i.e.*, achieved, an increase of 68 times his own weight in three or four months." A salmon, 2½ feet long usually weighs 9 pounds or 10 pounds; when 3 feet long, 16 or 17 pounds, and when of the length of 4 feet, the weight is usually 50 pounds. Fish, 60, 70 and 80 pounds in weight are taken in some rivers, but the increase to these enormous weights is accompanied mainly by an increase in vertical depth and lateral thickness, rather than length. The well-known experiments of the late Duke of Atholl demonstrated the increase in weight in the short space of six months of salmon 10, 11½ and 12½ pounds weight to a weight of no less than 17, 18 and 19 pounds respectively.

For facility of reference, the following salient points are summarized in conclusion:—

(I.)—Eight stages may be distinguished in the life of the salmon: *(a)* the egg, *(b)* the larva, *(c)* the parr which descends after one or two years, *(d)* the silvery smolt stage assumed by the parr in its descent, *(e)* the grilse returning in a few months, or in a year or more, which may be sexually mature, *(f)* the grilse kelt descending to the sea, *(g)* the adult salmon, eight pounds weight, or more, depositing and fertilizing spawn annually or biennially, *(h)* the salmon kelt descending in the spring subsequent to spawning.

(II.)—The male salmon at the spawning season greatly changes in form and appearance, especially in Pacific species.

(III.)—A considerable proportion of parent salmon die on all salmon rivers, and this is especially noticeable on Pacific rivers.

(IV.)—Salmon cease to feed, and their digestive organs become non-efficient after entering fresh water.

(V.)—Each river has its own race of salmon, which show local peculiarities; and these, in the main, return to their own rivers.

(VI.)—Female salmon frequently predominate.

(VII.)—Salmon spawn annually, though some may spawn biennially, or in alternate years.

(VIII.)—Adult salmon grow rapidly in the sea, and may double their weight in six months.

(IX.)—There are runs of salmon which return without spawning, apparently omitting spawning for a year.

APPENDIX No. 1.

EXPENDITURE AND REVENUE.

The total expenditure for all Fisheries services, except Civil Government, for the fiscal year ending 30th June, 1898, including Fishing Bounty, amounted to $432,635.41, being within the appropriation by $42,002.30.

The total fisheries revenue, during the same period, from rents, license fees, fines and sales, including the *modus vivendi* licenses to United States vessels, amounted to $113,103.50.

Service.	Expenditure	Vote.
	$ cts.	$ cts.
Fisheries	90,332 14	95,000 00
Fish-breeding	28,002 32	34,500 00
Fisheries protection service	97,170 05	106,127 65
Fishing bounty	157,504 00	160,000 00
Miscellaneous expenditure	59,626 90	79,010 06
Total	432,635 41	474,637 71

The details of the above will be found in the Auditor General's report under the proper headings.

In addition to the above, the following summary shows the salaries and disbursements of fishery officers in the several provinces, together with the expenses for maintenance of the different fish-breeding establishments throughout the Dominion:—

Service.	Expenditure	Vote.
	$ cts.	$ cts.
Fisheries, Ontario	19,239 34	
do Quebec	11,149 16	
do New Brunswick	17,063 58	
do Nova Scotia	21,683 91	
do Prince Edward Island	6,775 78	
do Manitoba	1,206 26	
do North-west Territories	2,324 66	
do British Columbia	8,508 79	
General account	2,389 66	
Total	90,332 14	95,000 00

SALARIES and Disbursements of Fishery Officers—*Continued.*

Service.	Expenditure	Vote.
	$ cts.	$ cts.
Fish-breeding, Ottawa hatchery	1,529 95	
do Newcastle do	3,579 87	
do Sandwich do	4,866 92	
do Tadoussac do	2,459 50	
do Gaspé do	577 95	
do Magog do	313 35	
do Restigouche do	2,777 60	
do Bedford do	1,274 10	
do Bay View do	2,074 63	
do Sydney do	176 30	
do Miramichi do	2,229 39	
do St. John Riv. do	1,729 24	
do Fraser Riv. do	2,389 46	
do Selkirk do	1,586 12	
General account	437 94	
Total	28,002 32	34,500 00

This expenditure by provinces is subdivided as follows:—

EXPENDITURE.

	$ cts.	$ cts.
Ontario.		
Salaries of officers	13,177 24	
Disbursements of officers	5,924 76	
Miscellaneous	137 34	
Total		19,239 34
Quebec.		
Salaries of officers	6,593 17	
Disbursements of officers	4,509 54	
Miscellaneous	37 45	
Total		11,140 16
New Brunswick.		
Salaries of officers	10,228 76	
Disbursements of officers	6,536 60	
Miscellaneous	298 22	
Total		17,063 58
Nova Scotia.		
Salaries of officers	13,035 69	
Disbursements of officers	8,590 99	
Miscellaneous	57 23	
Total		21,683 91
Prince Edward Island.		
Salaries of officers	3,973 30	
Disbursements of officers	1,716 84	
Miscellaneous	1,085 64	
Total		6,775 78

EXPENDITURE—*Continued.*

	$ cts.	$ cts.
Manitoba.		
Salaries of officers	738 34	
Disbursements of officers	467 92	
Total		1,206 26
North-west Territories.		
Salaries of officers	1,644 70	
Disbursements of officers	608 42	
Miscellaneous	71 54	
Total		2,324 66
British Columbia.		
Salaries of officers	5,146 04	
Disbursements of officers	811 69	
Miscellaneous	2,551 06	
Total		8,508 79
General account		2,389 66
Grand total		90,332 14

FISH-BREEDING.

Newcastle Hatchery.		
Salaries	540 00	
Miscellaneous expenditure	3,039 87	
Total		3,579 87
Sandwich Hatchery.		
Salaries	900 00	
Miscellaneous expenditure	3,966 92	
Total		4,866 92
Ottawa Hatchery.		
Salaries	923 00	
Miscellaneous expenditure	606 95	
Total		1,529 95
Tadoussac Hatchery.		
Salaries	650 00	
Miscellaneous expenditure	1,809 50	
Total		2,459 50
Gaspé Hatchery.		
Salaries	400 00	
Miscellaneous expenditure	177 95	
Total		577 9

FISH-BREEDING—*Continued.*

	$ cts.	$ cts.
Magog Hatchery.		
Salaries	206 85	
Miscellaneous expenditure	106 50	
Total		313 35
Restigouche Hatchery.		
Salaries	700 00	
Miscellaneous expenditure	2,077 60	
Total		2,777 60
Bedford Hatchery.		
Salaries	450 00	
Miscellaneous expenditure	824 10	
Total		1,274 10
Bay View Hatchery.		
Salaries	450 00	
Miscellaneous expenditure	1,624 63	
Total		2,074 63
Sydney Hatchery.		
Salaries	90 00	
Miscellaneous expenditure	86 30	
Total		176 30
Miramichi Hatchery.		
Salaries	1,000 00	
Miscellaneous expenditure	1,229 39	
Total		2,229 39
St. John River Hatchery.		
Salaries	600 00	
Miscellaneous expenditure	1,129 24	
Total		1,729 24
Selkirk Hatchery.		
Miscellaneous expenditure		1,586 12
Fraser River Hatchery.		
Salaries	500 00	
Miscellaneous expenditure	1,889 46	
Total		2,389 46
General Account.		
Miscellaneous expenditure		437 94
Total, Fish-breeding		28,002 32
Total salaries and disbursements of fishery officers		90,332 14

MISCELLANEOUS.

MISCELLANEOUS.	$ cts.
Building fishways	690 24
Legal and incidental expenses	1,239 84
Canadian fisheries exhibit	882 24
Expenditure in connection with the distribution of fishing bounties	4,965 68
Surveys of oyster beds	3,234 59
Issuing licenses to United States fishing vessels	244 57
Behring Sea Claims Commission	32,709 14
Paris Award	1,046 27
Fisheries Reference	13,135 34
Fisheries and Yacht Exhibition	548 99
Dr. McPhail, special reports on lobsters	750 00
Weldon Outhouse, gratuity to parents of	180 00
Total	59,626 90

FISHERIES PROTECTION SERVICE—1897-98.

	$ cts.	$ cts.
Steamer "Acadia."		
Wages of officers and men	7,110 80	
Provisions	3,047 41	
Fuel	1,907 72	
Repairs	2,065 07	
Miscellaneous	3,900 55	
Total		18,031 55
Steamer "La Canadienne."		
Wages of officers and men	3,084 91	
Provisions	79 86	
Fuel	183 67	
Repairs	7,830 57	
Miscellaneous expenditure	2,602 52	
Total		13,781 53
Steamer "Stanley."		
Wages of officers and men	1,096 01	
Provisions	859 93	
Fuel	600 15	
Miscellaneous expenditure	24 19	
Total		2,580 28
Steamer "Curlew."		
Wages of officers and men	4,980 55	
Provisions	1,302 35	
Fuel	1,561 59	
Repairs	137 20	
Miscellaneous expenditure	1,882 32	
Total		9,864 01
Steamer "Petrel."		
Wages of officers and men	6,803 81	
Provisions	1,628 07	
Fuel	1,213 90	
Miscellaneous expenditure	108 36	
Repairs	1,307 35	
Total		11,061 49

FISHERIES PROTECTION SERVICE, &c.—*Concluded.*

	$ cts.	$ cts.
Steamer "Constance."		
Wages of officers and men	5,527 03	
Provisions	1,735 66	
Fuel	4,053 63	
Repairs	2,862 62	
Miscellaneous expenditure	2,647 51	
Total		16,826 45
Steamer "Osprey."		
Wages of officers and men	3,772 55	
Provisions	1,590 52	
Fuel	53 15	
Repairs	52 75	
Miscellaneous expenditure	1,979 71	
Total		7,448 68
Schooner "Kingfisher."		
Wages of officers and men	3,060 51	
Provisions	1,590 45	
Fuel	50 38	
Repairs	87 14	
Miscellaneous expenditure	1,383 61	
Total		6,172 09
Steamer "Dolphin."		
Wages of officers and men	2,148 64	
Provisions	560 94	
Fuel	521 98	
Repairs	335 22	
Miscellaneous	527 16	
Total		4,093 94
Steamer "Aberdeen."		
Wages, &c., officers and men	10,290 01	
Provisions	4,386 48	
Fuel	3,352 42	
Repairs	1,474 42	
Miscellaneous	6,546 98	
Total		26,050 31
Steamer "Victoria."		
Wages, &c.	2,006 67	
Provisions	383 38	
Fuel	30 35	
Miscellaneous	2,214 51	
		4,634 91
Fisheries Intelligence Bureau		2,288 73
General account		8,241 73
Total		131,075 70
LESS—Amount paid by Customs Dept. for Str. "Constance"	16,826 45	
do do do "Curlew"	9,864 01	
do do do "Stanley"	2,580 28	
do do do "Victoria"	4,634 91	
		33,905 65
Net total		97,170 05

STATEMENT of Fisheries Revenue paid to the credit of the Receiver General of Canada, for the Fiscal Year ended 30th June, 1898.

			$ cts.
Ontario, rents, license fees, fines, &c.			30,574 57
Quebec	do	do	7,571 15
Nova Scotia	do	do	5,317 08
New Brunswick	do	do	11,511 85
P. E. Island	do	do	2,707 57
Manitoba	do	do	1,515 00
N. W. Territories	do	do	393 87
British Columbia	do	do	47,864 75
			107,455 84
LESS—Refunds			1,276 25
			106,179 59
Licenses to U. S. fishing vessels			6,923 91
Total			113,103 50

COMPARATIVE Statement of Expenditure and Revenue of the

	1885-86.		1886-87.	
	Expenditure.	Revenue.	Expenditure.	Revenue.
	$ cts.	$ cts.	$ cts.	$ cts.
Ontario	17,900 74	15,917 62	19,534 01	15,063 57
Quebec	13,938 21	2,963 75	14,966 55	3,804 66
New Brunswick	15,719 36	4,078 10	16,944 87	4,417 52
Nova Scotia	17,852 33	2,166 53	18,092 21	1,585 28
Prince Edward Island	3,187 73	40 00	4,044 49	128 00
Manitoba and North-west Territories	1,920 73	....	2,468 25	5 00
British Columbia	1,878 53	922 50	5,860 72	943 50
Fish-breeding and fishways	44,038 80	....	37,864 22	....
Fisheries Protection Service	37,613 30	....	134,340 12	....
Miscellaneous	10,350 43	....	11,327 77	....
Totals	164,400 16	26,088 50	265,443 21	25,947 53
Fishing bounties	161,597 39	....	160,903 59	....

	1891-92.		1892-93.		1893-94.	
	Expenditure.	Revenue.				
	$ cts.	$ cts.				
General Account Fisheries	....	....	....	....	....	....
Ontario	15,155 83	25,368 90	20,116 91	30,623 09	22,634 37	28,632 82
Quebec.	10,917 36	4,742 76	11,761 34	7,471 70	11,692 82	7,211 82
New Brunswick	15,707 98	6,334 83	15,721 05	7,831 53	18,522 94	8,333 24
Nova Scotia	18,755 86	3,357 42	19,444 22	6,782 02	20,420 81	5,296 27
Prince Edward Island	1,835 65	166 00	2,847 60	304 10	3,078 55	980 15
Manitoba	3,593 43	1,079 00	3,932 96	1,661 68	5,331 29	926 99
North-west Territories						
British Columbia	6,158 17	8,192 48	5,490 60	40,264 00	5,283 21	25,337 90
Fish-breeding	43,957 74	178 00	47,322 49	....	45,024 67	....
Fisheries Protection Service.	93,397 40	....	106,805 39	....	115,147 59	....
Miscellaneous	17,449 06	....	100,602 14	....	34,892 19	....
Totals	226,928 48	49,719 39	334,044 70	94,938 12	282,028 44	76,719 19
Fishing bounties	156,892 25	....	159,752 15	....	158,794 54	....

Fisheries Department, from 1st July, 1885, to 30th June, 1898.

1887-88.		1888-89.		1889-90.		1890-91.	
Expenditure.	Revenue.	Expenditure.	Revenue.	Expenditure.	Revenue.	Expenditure.	Revenue.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
19,860 52	18,251 25	19,264 98	24,266 06	14,539 87	23,666 96	15,540 30	26,517 70
13,463 37	5,394 99	12,991 63	3,390 79	9,670 94	5,409 81	10,666 98	3,642 14
20,533 20	7,625 64	20,298 00	8,282 88	14,914 95	8,834 35	16,082 77	7,193 69
18,308 02	3,905 44	20,201 09	2,744 23	17,395 24	5,424 95	17,844 19	5,582 65
3,402 51	...	3,746 69	140 00	3,113 21	302 88	3,242 25	667 00
2,816 64	819 25	2,848 16	848 00	3,604 70	794 00	3,609 03	1,234 00
3,661 83	6,934 55	4,333 63	6,416 00	3,634 41	11,367 50	4,320 53	12,859 02
41,082 04	...	41,315 12	352 50	39,126 91	...	39,496 45	1,286 50
77,102 98	...	69,693 82	...	64,434 66	1,176 38	83,050 16	1,934 49
13,498 56	...	10,912 18	...	9,313 92	...	13,382 28	...
213,729 67	42,931 12	205,605 30	46,440 46	178,748 81	56,976 83	207,234 94	60,917 19
163,757 92	...	149,990 63	...	149,999 85	...	165,967 22	...

1804-95.		1895-96.		1896-97.		1897-98.	
...	...	...	...	2,198 47	...	2,389 66	...
21,938 56	33,211 60	24,917 48	35,681 68	21,592 40	32,814 66	19,239 34	30,574 57
12,459 34	8,836 18	11,870 43	8,160 98	12,910 80	7,876 12	11,140 16	7,571 15
21,370 94	11,170 36	20,526 56	10,696 88	21,671 92	10,110 77	17,063 58	5,317 08
23,555 38	7,075 07	23,049 41	6,180 93	23,682 33	5,239 55	21,683 91	11,511 85
3,796 58	3,312 30	3,555 87	2,161 85	3,744 36	2,032 25	6,775 78	2,707 57
6,178 71	2,458 80	6,915 20	2,256 69	{ 1,908 14	1,719 00	1,206 26	1,515 00
				2,181 58	344 13	2,324 66	393 87
6,218 74	23,517 25	6,226 77	26,410 75	8,841 64	39,888 82	8,508 79	47,864 75
39,730 93	...	38,050 41	...	27,330 73	...	28,002 32	...
100,207 29	...	102,021 72	...	99,357 41	...	101,807 96	...
24,619 86	...	20,203 25	...	62,777 30	...	59,919 56	...
260,076 33	89,581 56	257,237 10	91,549 76	289,197 01	100,025 30	280,061 98	107,455 84
160,089 42	...	163,567 99	...	154,389 77	...	...	...
420,165 75		420,805 09					

APPENDIX No. 2.

FISHING BOUNTIES.

The payments made for this service are under the authority of Act 54-55 Vic., cap. 42, intituled: "An Act to encourage the development of the sea fisheries and the building of fishing vessels," which provides for the payment of the sum of $160,000 annually, under regulations to be made from time to time by the Governor General in Council.

REGULATIONS.

The regulations governing the payment of fishing bounties, as established by Order in Council of the 24th August, 1894, were amended by Order in Council of the 10th of December, 1897, and are as follows:—

Order in Council.

AT THE GOVERNMENT HOUSE AT OTTAWA,
FRIDAY, the 10th day of December, 1897.

Present:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency, in virtue of the provisions of "The Bounty Act, 1891," 54-55 Victoria, chapter 42, and by and with the advice of the Queen's Privy Council for Canada, is pleased to order that the regulations governing the payment of fishing bounties established by Order of the Governor in Council dated the 24th August, 1894, shall be and the same are hereby rescinded, and the following regulations substituted therefor:—

1. Resident Canadian fishermen who have been engaged in deep-sea fishing for fish other than shell-fish, salmon and shad, or fish taken in rivers, or mouths of rivers, for at least three months, and have caught not less than 2,500 pounds of sea-fish, shall be entitled to a bounty: provided always, that no bounty shall be paid to men fishing in boats measuring less than 13 feet keel, and not more than 3 men (the owner included) will be allowed as claimants in boats under 20 feet.

2. No bounty shall be paid upon fish caught in trap-nets, pound-nets and weirs, nor upon the fish caught in gill-nets fished by persons who are pursuing other occupations than fishing, and who devote merely an hour or two daily to fishing these nets but are not, as fishermen, steadily engaged in fishing.

3. Only one claim will be allowed in each season, even though the claimant may have fished in two vessels, or in a vessel and a boat or in two boats.

4. The owners of boats measuring not less than 13 feet keel which have been engaged during a period of not less than three months in deep-sea fishing for fish other than shell-fish, salmon or shad, or fish taken in rivers, or mouths of rivers, shall be entitled to a bounty on each such boat.

5. Canadian registered vessels, owned and fitted out in Canada, of 10 tons and upwards (up to 80 tons) which have been exclusively engaged during a period of not

less than three months in the catch of sea-fish other than shell-fish, salmon or shad, or fish taken in rivers, or mouths of rivers, shall be entitled to a bounty to be calculated on the registered tonnage which shall be paid to the owner or owners.

6. The three months during which a vessel must have been engaged in fishing, to be entitled to bounty, shall commence on the day the vessel sails from port on her fishing voyage and end the day she returns to port from said voyage.

7. Owners or masters of vessels intending to fish and claim bounty on their vessels must, before proceeding on a fishing voyage, procure a license from the nearest Collector of Customs or Fishery Overseer, said license to be attached to the claim when sent in for payment.

8. Dates and localities of fishing must be stated in the claim, as well as the quantity and kinds of sea-fish caught.

9. Ages of men must be given. Boys under 14 years of age are not eligible as claimants.

10. Claims must be sworn to as true and correct in all their particulars.

11. Claims must be filed on or before the 30th November in each year.

12. Officers authorized to receive claims will supply the requisite blanks free of charge, and after certifying the same will transmit them to the Department of Marine and Fisheries.

13. No claim in which an error has been made by the claimant or claimants shall be amended after it has been signed and sworn to as correct.

14. Any person or persons detected making returns that are false or fraudulent in any particular will be debarred from any further participation in the bounty, and be prosecuted according to the utmost rigour of the law.

15. The amount of the bounty to be paid to fishermen and owners of boats and vessels will be fixed from time to time by the Governor in Council.

16. All vessels fishing under bounty license are required to carry a distinguishing flag, which must be shown at all times during the fishing voyage at the main topmast head. The flag must be four feet square in equal parts of red and white, joined diagonally from corner to corner. Any case of neglect to carry out this regulation reported to the Department of Marine and Fisheries will entail the loss of the bounty, unless satisfactory reasons are given for its non-compliance.

JOHN J. McGEE
Clerk of the Privy Council.

There were received for the year 1897, 14,847 claims, a decrease of 364 compared with the year 1896.

The number of claims paid during the year was 14,729, being a decrease of 246 as compared with the previous year.

There was $60,939 in bounties paid to vessels and their crews, and $96,565 to boats and boat fishermen, making the total bounty paid during the year 1897-8, $157,504.

The number of vessels which received bounty during the year was 790, the total tonnage being 25,725 tons, showing a decrease of 72 vessels and 2,826 tons, as compared with the previous year.

Bounty was paid on 13,939 boats, and to 23,612 boat fishermen during the year, being a decrease of 167 boats and 209 fishermen, as compared with 1896-7.

GENERAL STATEMENT of Fishing Bounty Claims received and paid for the year 1897.

Province.	County.	Number of Claims received.	Number of Claims rejected.	Number of Claims paid.
Nova Scotia	Annapolis	168	...	168
	Antigonish	129	1	128
	Cape Breton	503	1	502
	Colchester	...	...	...
	Cumberland	8	...	8
	Digby	394	...	394
	Guysborough	1,362	5	1,357
	Halifax	1,430	9	1,421
	Hants	1	...	1
	Inverness	587	2	585
	King's	50	...	50
	Lunenburg	913	3	910
	Pictou	39	...	39
	Queen's	191	2	189
	Richmond	1,077	7	1,070
	Shelburne	882	2	880
	Victoria	473	...	473
	Yarmouth	243	...	243
	Totals	8,450	32	8,418
New Brunswick	Charlotte	483	1	482
	Gloucester	445	55	*395
	Kent	75	...	75
	Northumberland	4	...	4
	Restigouche	...	...	...
	St. John	35	...	35
	Westmoreland	...	...	...
	Totals	1,042	56	991
Prince Edward Island	King's	617	...	617
	Prince	459	2	457
	Queen's	99	2	97
	Totals	1,175	4	1,171
Quebec	Bonaventure	873	22	851
	Gaspé	2,453	8	2,445
	Rimouski	69	...	69
	Saguenay	785	3	784
	Totals	4,180	33	4,149
	Grand totals	14,847	125	14,729

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* NOTE.—The number of claims paid includes several applications for previous years, which explains the difference between claims paid and claims received, after deducting those rejected.

DETAILED STATEMENT of Fishing Bounties paid to **Vessels** in each County for the Year 1897.

Province.	County.	Number of Vessels.	Tonnage.	Average Tonnage.	Number of Men.	Amount paid.
						$ cts.
Nova Scotia	Annapolis	9	262	29	47	544 00
	Antigonish	2	34	17	6	70 00
	Cape Breton	11	177	16	58	525 00
	Cumberland	1	14	14	2	26 00
	Digby.....	50	1,461	29	401	3,867 00
	Guysborough.........	19	435	23	86	951 00
	Halifax	55	1,184	21	309	3,038 00
	Hants.................	1	17	17	4	41 00
	Inverness.............	22	355	16	92	907 00
	King's	2	33	16	7	75 00
	Lunenburg...........	161	11,650	72	2,425	26,195 00
	Pictou..........	1	15	15	3	33 00
	Queen's.	8	267	33	66	663 00
	Richmond........	56	1,691	30	357	3,833 00
	Shelburne	66	1,945	29	519	5,059 00
	Victoria..	1	17	17	2	29 00
	Yarmouth	42	1,766	42	445	4,436 00
	Totals..........	507	21,323	42	4,829	50,292 00
New Brunswick	Charlotte.............	46	776	17	159	1,730 00
	Gloucester............	182	2,129	12	620	5,848 00
	Kent.	....	....	....	....	....
	Northumberland.......	1	13	13	3	31 00
	Restigouche...........	... .	....	....	....	....
	St. John.....	10	161	16	34	365 00
	Totals...........	239	3,079	13	816	7,974 00
Prince Edward Island...	King's	12	305	25	67	707 00
	Prince	5	130	26	26	286 00
	Queen's...............	3	55	18	16	151 00
	Totals	20	490	29	109	1,144 00
Quebec.................	Bonaventure..........	1	26	26	5	56 00
	Gaspé	1	16	16	5	46 00
	Rimouski..............	....	....	....	....	....
	Saguenay.............	22	791	36	106	1,427 00
	Totals	24	833	35	116	1,529 00
	Grand totals...	790	25,725	33	5,870	60,939 00

DETAILED STATEMENT of Fishing Bounties paid to **Boats** in each County for the Year 1897.

Province.	County.	Number of Boats.	Number of Men.	Amount paid.	Total Bounty paid to Vessels and Boats in 1897.
				$ cts.	$ cts.
Nova Scotia	Annapolis	159	231	967 50	1,511 50
	Antigonish	126	184	770 00	840 00
	Cape Breton	491	915	3,693 50	4,218 50
	Cumberland	7	15	59 50	85 50
	Digby	344	651	2,622 50	6,489 50
	Guysborough	1,338	2,209	9,069 50	10,020 50
	Halifax	1,366	1,964	8,241 50	11,279 50
	Hants	....	....	....	41 00
	Inverness	563	1,187	4,717 50	5,624 50
	King's	48	77	317 50	392 50
	Lunenburg	749	850	3,706 00	29,901 00
	Pictou	38	58	241 00	274 00
	Queen's	181	280	1,161 00	1,824 00
	Richmond	1,014	1,536	6,390 00	10,223 00
	Shelburne	814	1,303	5,374 50	10,433 50
	Victoria	472	787	3,226 50	3.255 50
	Yarmouth	201	295	1,253 50	5,669 50
	Totals	7,911	12,542	51,791 50	102,083 50
New Brunswick	Charlotte	436	687	2,840 50	4,570 50
	Gloucester	213	491	1,931 50	7,779 50
	Kent	75	123	505 50	505 50
	Northumberland	3	10	38 00	69 00
	Restigouche	....	....	....	....
	St. John	25	40	165 00	530 00
	Westmoreland	....	....	....	....
	Totals	752	1,351	5,480 50	13,454 50
Prince Edward Island	King's	605	971	4,003 50	4,710 50
	Prince	452	933	3,717 00	4,003 00
	Queen's	94	243	944 50	1,095 50
	Totals	1,151	2,147	8,665 00	9,809 00
Quebec	Bonaventure	850	1,447	5,914 50	5,970 50
	Gaspé	2,444	4,744	19,049 00	19,095 00
	Rimouski	69	97	408 50	408 50
	Saguenay	762	1,284	5,256 00	6,683 00
	Totals	4,125	7,572	30,628 00	32,157 00
	Grand totals	13,939	23,612	96,565 00	157,504 00

GENERAL STATISTICS.

The fishing bounty was first paid in 1882.

The payments were made each year on the following basis:—

1882, vessels $2 per ton, one-half to the owner and the other half to the crew. Boats at the rate of $5 per man, one-fifth to the owner and four-fifths to the men.

1883, vessels $2 per ton, and boats $2.50 per man, distributed as in 1882.

1884, vessels $2 per ton, as in 1882 and 1883.

Boats from 14 to 18 feet keel	$1 00
do 18 to 25 do	1 50
do 25 feet keel upwards	2 00

And boat fishermen $3 each.

1885, 1886 and 1887, vessels $2 per ton as in previous years. Boats measuring 13 feet keel having been admitted in 1885, the rates were:—Boats from 13 to 18 feet keel, $1; from 18 to 25 feet keel, $1.50; from 25 feet keel upwards, $2, and fishermen $3 each.

1888, vessels $1.50 per ton, one-half each to owner and crew. Boats, the same as in 1885, 1886 and 1887.

1889, 1890 and 1891, vessels $1.50 per ton as in 1888. Boats $1 each. Boat fishermen $3.

1892, vessels $3 per ton, one-half each to owner and crew. Boats $1 each. Boat fishermen $3.

1893, vessels $2.90 per ton, paid as formerly. Boats $1 each. Boat fishermen $3.

1894, vessels $2.70 per ton, distributed as in previous years. Boats $1 each. Boat fishermen $3.

1895, vessels $2.60 per ton, half each to owner and crew. Boats $1 each. Boat fishermen $3.

1896, vessels $1 per ton, which was paid to the owners, and vessel fishermen $5 each, clause 5 of the regulations having been amended accordingly. Boats $1 each, and boat fishermen $3.50 per man.

1897, vessels $1 per ton, and vessel fishermen $6 each. Boats $1 each, and boat fishermen $3.50 per man.

Since 1882, 13,070 vessels, totalling a tonnage of 477,741 tons, have received the bounty. The total number of vessel fishermen which received bounty is 99,602, being an average of 8 men per vessel.

The total number of boats to which bounty was paid since 1882 is 224,817, and the number of fishermen 423,714. Average number of men per boat, 2.

The highest bounty paid per head to vessel fishermen was $21.75 in 1893; the lowest 83 cents, while the highest to boat fishermen was $4, the lowest $2.

The general average paid per head is $4.82.

COMPARATIVE STATEMENT by Provinces for the Years 1882 to 1897, inclusive, showing :—

(1) Total number of Fishing Bounty Claims received and paid by the Department of Marine and Fisheries.

YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		PRINCE EDWARD ISLAND.		QUEBEC.		TOTAL.	
	Received.	Paid.	Received.	Paid.	Received.	Paid.	Received.	Paid.	Received.	Paid.
1882	6,730	6,613	1,257	1,142	1,169	1,100	3,162	3,117	12,318	11,972
1883	7,171	7,076	1,693	1,579	1,138	1,106	3,602	3,325	13,604	13,086
1884	7,007	6,930	1,252	1,224	923	885	3,470	3,429	12,652	12,468
1885	7,646	7,599	1,609	1,588	1,117	1,025	3,943	3,912	14,315	14,124
1886	7,639	7,702	1,767	1,763	1,131	1,080	4,275	4,355	14,812	14,900
1887	8,262	8,227	1,975	1,958	1,201	1,126	4,138	4,105	15,576	15,416
1888	8,481	8,429	2,065	2,026	1,153	834	4,328	4,310	16,027	15,599
1889	8,816	8,523	2,428	2,392	1,211	1,511	4,664	4,652	17,119	17,078
1890	9,337	9,429	2,522	2,469	1,352	1,257	4,860	4,804	18,071	17,959
1891	10,242	10,063	2,831	2,084	1,482	1,446	5,108	4,913	19,663	18,506
1892	8,272	8,186	1,067	1,001	1,065	1,051	4,425	4,204	14,829	14,442
1893	7,926	7,844	967	881	1,027	1,012	4,059	3,898	13,979	13,635
1894	8,640	8,600	925	911	983	963	3,948	3,876	14,496	14,350
1895	8,835	8,825	979	975	1,009	1,025	3,904	3,955	14,727	14,780
1896	8,597	8,562	1,137	1,064	1,111	1,120	4,366	4,229	15,211	14,975
1897	8,450	8,418	1,042	991	1,175	1,171	4,180	4,149	14,847	14,729
Totals	132,051	131,026	25,516	24,048	18,247	17,712	66,432	65,233	242,246	238,019

(2) Number of vessels, tonnage and number of men which received Bounty in each year.

YEAR.	NOVA SCOTIA.			NEW BRUNSWICK.			PRINCE EDWARD ISLAND.			QUEBEC.			TOTAL.		
	No. of Vessels.	Tonnage.	No. of Men.	No. of Vessels.	Tonnage.	No. of Men.	No. of Vessels.	Tonnage.	No. of Men.	No. of Vessels.	Tonnage.	No. of Men.	No. of Vessels.	Tonnage.	No. of Men.
1882	588	22,841	5,343	120	2,171	531	15	389	74	63	2,210	538	786	27,611	6,486
1883	700	29,788	6,238	126	2,102	496	16	450	66	62	2,236	443	904	34,576	7,243
1884	700	29,828	6,327	139	2,289	560	16	582	92	56	1,965	382	911	34,664	7,361
1885	629	27,709	5,897	128	2,120	496	19	597	113	55	1,791	317	831	32,217	6,823
1886	562	25,375	5,022	145	2,628	520	32	1,071	215	52	1,730	320	791	30,804	6,077
1887	566	24,520	4,900	154	2,889	563	38	1,677	338	54	1,883	334	812	30,969	6,135
1888	589	26,008	5,450	150	2,545	514	37	1,245	249	51	1,842	388	827	31,640	6,631
1889	597	27,123	5,684	153	2,590	565	35	1,274	239	48	1,729	330	833	32,716	6,818
1890	540	23,955	4,935	133	2,129	447	32	1,002	203	34	1,182	220	739	28,268	5,805
1891	527	22,780	4,618	124	2,051	411	27	778	155	27	924	168	705	26,533	5,352
1892	507	22,279	4,611	108	1,683	343	30	983	139	23	803	159	668	25,748	5,252
1893	536	23,195	4,780	210	2,922	634	27	910	151	32	952	179	805	27,979	5,744
1894	602	24,735	5,077	238	3,189	721	21	594	114	38	1,066	178	899	29,584	6,090
1895	603	25,018	5,184	238	3,107	764	27	769	129	39	1.262	173	907	30,156	6,250
1896	553	23,415	4,607	250	3,337	800	23	656	114	36	1,143	144	862	28,551	5,665
1897	507	21,323	4,829	239	3,079	816	20	490	109	24	833	116	790	25,725	5,870
Totals	9,306	399,892	83,502	2,655	40,831	9,211	415	13,467	2,500	694	23,551	4,389	13,070	477,741	99,602

(3) NUMBER of Boats and boat fishermen which received Bounty in each year.

YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		P. E. ISLAND.		QUEBEC.		TOTAL.	
	No. of Boats.	No. of Men.	No. of Boats.	No. of Men.	No. of Boats.	No. of Men.	No. of Boats.	No. of Men.	No. of Boats.	No. of Men.
1882	6,043	12,130	1,024	2,530	1,087	3,070	3,071	5,716	11,225	23,446
1883	6,458	13,553	1,453	3,309	1,098	3,106	3,266	6,188	12,275	26,156
1884	6,257	12,669	1,086	2,505	869	2,346	3,344	6,416	11,556	23,936
1885	6,970	13,396	1,460	3,254	1,006	2,606	3,857	7,485	13,293	26,741
1886	7,140	13,351	1,618	3,567	1,048	2,547	4,303	7,981	14,109	27,446
1887	7,662	13,997	1,804	3,994	1,088	2,711	4,051	7,550	14,605	28,252
1888	7,840	14,115	1,876	4,148	797	2,141	4,259	7,852	14,772	28,256
1889	7,926	14,118	2,237	5,032	1,475	3,568	4,602	8,807	16,240	31,525
1890	8,886	15,738	2,324	5,242	1,192	3,024	4,766	9,241	17,168	33,245
1891	9,525	16,552	1,928	4,126	1,383	3,427	4,865	9,402	17,701	33,507
1892	7,679	12,307	893	1,765	1,021	2,047	4,181	7,693	13,774	23,812
1893	7,308	11,748	671	1,314	985	1,962	3,866	7,245	12,830	22,269
1894	7,956	12,899	661	1,281	913	1,813	3,821	7,139	13,351	23,132
1895	8,222	13,106	737	1,434	998	2,141	3,916	7,877	13,873	24,558
1896	8,008	12,454	814	1,553	1,095	2,126	4,189	7,688	14,106	23,821
1897	7,911	12,542	752	1,351	1,151	2,147	4,125	7,572	13,939	23,612
Totals	121,791	214,675	21,338	46,405	17,206	40,782	64,482	121,852	224,817	423,714

(4) TOTAL Number of men receiving Bounty in each year.

YEAR.	NOVA SCOTIA.	NEW BRUNSWICK	P. E. ISLAND.	QUEBEC.	TOTAL.
	No. of Men.	No. of Men.	No. of Men.	No of Men.	
1882	17,473	3,061	3,144	6,254	29,932
1883	19,791	3,805	3,172	6,631	33,399
1884	18,996	3,065	2,438	6,798	31,297
1885	19,293	3,750	2,719	7,802	33,564
1886	18,373	4,087	2,762	8,301	33,523
1887	18,897	4,557	3,049	7,884	34,387
1888	19,565	4,692	2,390	8,240	34,887
1889	19,802	5,597	3,807	9,137	38,343
1890	20,673	5,689	3,227	9,461	39,050
1891	21,170	4,537	3,582	9,570	38,859
1892	16,918	2,108	2,186	7,852	29,064
1893	16,528	1,948	2,113	7,424	28,013
1894	17,976	2,002	1,927	7,317	29,222
1895	18,290	2,198	2,270	8,050	30,808
1896	17,061	2,353	2,240	7,832	29,486
1897	17,371	2,167	2,256	7,688	29,482
Totals	298,177	55,616	43,282	126,241	523,316

(5) TOTAL annual payments of Fishing Bounty.

Year.	Nova Scotia.	New Brunswick.	P. E. Island.	Quebec.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1882	106,098 72	16,997 00	16,137 00	33,052 75	172,285 47
1883	89,432 50	12,395 20	8,577 14	19,940 01	130,344 85
1884	104,934 09	13,576 00	9,203 96	28,004 93	155,718 98
1885	103,999 73	15,908 25	10,166 65	31,464 76	161,539 39
1886	98,789 54	17,894 57	10,935 87	33,283 61	160,903 59
1887	99,622 03	19,699 65	12,528 51	31,907 73	163,757 92
1888	89,778 90	18,454 92	9,092 96	32,858 75	150,185 53
1889	90,142 51	21,026 79	13,994 53	33,362 71	158,526 54
1890	91,235 64	21,108 33	11,686 32	34,210 72	158,241 01
1891	92,377 42	17,235 96	12,771 30	34,507 17	156,891 85
1892	109,410 39	10,864 61	9,782 79	29,694 35	159,752 14
1893	108,060 67	12,524 09	9,328 62	28,320 72	158,234 10
1894	111,460 03	12,690 80	7,875 79	28,040 18	160,066 80
1895	110,765 27	12,919 32	9,285 13	30,598 27	163,567 99
1896	98,048 95	13,602 88	9,745 50	32,992 44	154,389 77
1897	102,083 50	13,454 50	9,809 00	32,157 00	157,504 00
Totals	1,606,239 89	250,352 87	170,921 07	494,396 10	2,521,909 93

LIST of Vessels which received Fishing Bounty for the Year 1897.

PROVINCE OF NOVA SCOTIA.

ANNAPOLIS COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
80093	Anna K.	St. John, N.B.	14	George Gibson	Margaretville	2	26 00
72978	Annie Coggins	Digby	21	David Hayden	Thorneville	7	63 00
94700	Franklin S. Schenck	do	44	John D. Apt	do	12	116 00
85503	G. P. Taylor	Yarmouth	13	Stephen Haynes	Victoria Beach	3	31 00
94706	George J. Tarr	Digby	61	John S. Hayden	do	12	133 00
94835	Georgie Linwood	St. Andrew's, NB	25	John W. Snow	Thorneville	3	43 00
94693	John H. Kennedy	Digby	54	do	do	*	54 00
94732	Only Son	Windsor	13	John Gordon	Margaretville	3	31 00
83253	Rescue	Annapolis	17	Josiah Burrell	Clementsport	5	47 00

ANTIGONISH COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
85382	G. H. Marryatt	Halifax	24	Jno. G. Graham	Bayfield	4	48 00
90642	Komaroff	Yarmouth	10	John Brow	Harb'r au Bouché	2	22 00

CUMBERLAND COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
83261	Economist	Digby	14	James E. Ogilvie	Parrsboro'	2	26 00

CAPE BRETON COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
100389	Annie F	Sydney	13	John Farrell	Main-à-Dieu	5	43 00
100372	Betsy Jane	do	11	Samuel Moore	Little Bras d'Or.	4	35 00
85381	Champion	do	19	John Williams, sr.	Louisburg	4	43 00
75571	Fanny	Liverpool	16	Wm. J. Christie	North Sydney	6	52 00
100383	Florence L.	Sydney	10	Peter Leblanc	Little Bras d'Or.	5	40 00
74039	James Henry	do	18	John Dunphy	North Sydney	5	48 00
100381	Katie B.	do	24	John H. Burke	Main-à-Dieu	6	60 00
103608	Maggie	do	11	Philip Wilcox	Big Lorraine	3	29 00
88431	Mayflower	Halifax	21	John P. Bates	Bateston	7	63 00
92600	Merit	Sydney	13	Alexander Leblanc	Little Bras d'Or.	6	49 00
100566	Rob S.	Halifax	21	Ambrose Forward.	Lingan	7	63 00

DIGBY COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
83431	Acadian	Weymouth	32	Geo. H. Stevens	Freeport	11	98 00
83258	Alfred	Digby	29	Edwin Haynes	do	9	83 00
75612	Alice	Yarmouth	17	Wm. Trahan	Belliveau's Cove.	4	41 00
90660	Alice May.	do	18	Edgar McDormand	Westport	8	66 00
94708	Ann Eliza	Digby	62	D. & O. Sproule	Digby	9	116 00
94696	Annie M. Sproule	do	70	Jno. W. Sproule	do	14	154 00
88598	Alph. B. Parker	St. John, N.B.	39	Holland Outhouse	Tiverton	13	117 00
94698	Carrie H.	Digby	20	Augustus Haycock	Westport	7	62 00
94704	Charles Haskell	do	67	Howard Anderson	Digby	13	145 00
74331	Condor	Yarmouth	11	Howard Titus	Westport	5	41 00
103181	Curlew	Shelburne	63	Joseph F. Melberry	Digby	14	147 00
85683	Edith L	Digby	16	R. W. Ford	Westport	5	46 00
90662	Edward A. Horton	do	67	Joseph E. Snow	Digby	12	139 00
77740	Elmer	do	15	James Gower	Westport	6	51 00
94707	Ernest F. Norwood	do	79	Joseph E. Snow	Digby	12	151 00

*Crew not entitled to bounty.

LIST of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

DIGBY COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
75757	Etta	Digby	17	Clarence Webber	Westport	7	59 00
74329	Fairy Queen	Yarmouth	13	Wallace Coggins	do	5	43 00
80798	Freddie G.	Digby	18	George Gower	do	7	60 00
77963	Freeman Colgate	St. Andrew's, N B	26	Charles Hicks	do	10	86 00
83260	Gazelle	Digby	20	D. & O. Sproule	Digby	7	62 00
90436	Genesta	Barrington	32	George Denton	Westport	12	104 00
100544	Helen Maud.	Digby	26	Chas McDormand	do	8	74 00
100064	Isma	St. Jôhn, N.B.	31	Charles Hicks	do	10	91 00
80604	Jennie C	Yarmouth	16	Amos H. Outhouse	Tiverton	8	64 00
83461	Josie L. Day	Digby	16	Edward Keans	Digby	3	34 00
77957	Kedron	Annapolis	22	Benjamin Taylor	Smith's Cove	3	40 00
80881	Lena May	St. Andrew's, N B	18	Freeman Small	Tiverton	6	54 00
59385	Letitia	do	10	Peter H. Belliveau	Belliveau's Cove.	3	28 00
85534	Lloyd	Yarmouth	23	W. H. Anderson	Digby	7	65 00
85690	Lora T	Digby	15	Joseph Thurber	Freeport	7	57 00
85687	Mabel	do	38	Wm. M. Denton	Westport	11	104 00
100487	Mabel B	do	57	Mendal G. Crocker	Freeport	12	129 00
85539	Maggie Jane	Yarmouth	12	Thomas Saulnier	Meteghan	5	42 00
85682	Malapert	Digby	23	E. C. Bowers	Westport	9	77 00
85533	Minnie C.	Yarmouth	12	Geo. Farnsworth	Tiverton	3	30 00
80794	Minnie C.	Digby	18	Chas. Bailey	Westport	8	66 00
100895	New Home	Weymouth	31	Moïse C. Thibodeau	Church Point	9	85 00
94825	On Time	Digby	19	Henry Glavin	Westport	9	73 00
7571[illegible]	Prince	Yarmouth	10	Chipman Thurber	Freeport	6	46 00
83132	Restless	Digby	25	Charles Shaw	Centreville	9	79 00
100539	Rowena	do	10	Warren Snow	Smith's Cove	4	34 00
85558	S. A. Crowell	do	23	Wallace Gower	Westport	8	71 00
75606	Sovereign	do	31	Clarence Peters	do	2	43 00
100609	Swan	Shelburne	56	Milton Haines	Freeport	13	134 00
75726	Thrush	Yarmouth	13	Frank Lent	Westport	3	31 00
94694	Utah and Eunice	Digby	33	Edwin Haines	Freeport	9	87 00
103711	Venite	Yarmouth	16	Philomon Doucette	Cape Cove	7	58 00
61501	Vesta	Digby	22	Wm. H. Brooks	Freeport	5	52 00
100543	W. Parnell O'Hara	do	79	Edgar Post	Digby	18	187 00
75595	West Wind	do	25	Syda & Cousins	do	6	61 00

GUYSBOROUGH COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
103453	Anna Maud	Arichat	10	Reuben H. Munroe	White Head	3	28 00
103322	Bonnie Brier Bush	Pt Hawkesbury	38	John O'Neil	Auld's Cove	6	74 00
100445	Carrie O	Canso	12	Samuel Crant	White Head	3	30 00
103321	Christie Campbell	Pt. Hawkesbury	55	Thos. H. Peeples	Pirate Harbour	9	109 00
38418	Dolphin	Arichat	36	W. S. Peart	Guysboro'	5	66 00
83180	Friend	Halifax	17	Luke Mannett, sr	Larry's River	6	53 00
94963	Golden Seal	do	32	Edward B. Pelrine	do	7	74 00
57715	John Lawrence	do	23	Wm. Hansen	Cook's Cove	3	41 00
69964	Lizzie A	Pt. Hawkesbury	20	John F. Reeves	Port Mulgrave	2	32 00
83406	M. A. Franklyn	Halifax	22	Wm. Dorion	Charlo's Cove	5	52 00
75577	Mary Ann Bell	Lunenburg	33	Joseph O'Neil	Auld's Cove	7	75 00
83226	Mary Queen	Charlottetown, P.E.I	22	Joseph Harding	Milford Haven Bridge	4	46 00
88466	Minnie J	Arichat	10	Perry Munroe	White Head	3	28 00
100446	Minnie May	Canso	12	Wm. L. Dort	Sandy Cove	3	30 00
80970	Orion	Halifax	24	Hubert Richard	Charlo's Cove	6	60 00
100231	Pearl	do	17	Alexander Keating	Canso	2	29 00
75892	Peter Mitchell	Pt. Hawkesbury	26	Michael Power	Port Mulgrave	5	56 00
92575	Robinette	Halifax	14	Reuben H. Munroe	White Head	3	32 00
100444	Stella May	Canso	12	James Meagher	Canso	4	36 00

List of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

HALIFAX COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
100221	Baleka	Halifax	31	Gray Bros. & Co	Sambro	8	79 00
90721	Brilliant Star	do	36	Peter Hartlin	East Jeddore	10	96 00
94662	Bessie Florence	do	12	Chas. Twohig	Pennant	3	30 00
90436	Black Prince	do	18	J. W. Slaunwhite	Terence Bay	4	42 00
96799	Catherine A. C.	do	17	Hezekiah Cleveland	West Dover	4	41 00
85663	Daring	do	18	Chas. Slaunwhite, sr.	Terence Bay	3	36 00
103852	Dawn	do	13	Jas. and Thos. Parker	Owl's Head	5	43 00
59484	Dayspring	do	36	Geo. L. Baker	West Jeddore	10	96 00
100220	E. J. Smith	do	11	W. McC. Boak	Halifax	4	35 00
90481	Ella D	do	32	Archd. Darrach, sr	Herring Cove	8	80 00
85738	Emma F	Lunenburg	13	Amos Graves	East Dover	5	43 00
97046	Fredona	Liverpool	12	Edward Sturmy	Spry Bay	3	30 00
100259	Florence G	Halifax	15	Caleb Gray	Sambro	3	33 00
100247	Fairy Queen	do	11	Geo. H. Nickerson	do	3	29 00
85644	Flora	do	42	Patrick Scallion	Herring Cove	9	96 00
80996	Gertie Belle	Guysborough	15	James Yorke	Eastern Passage	3	33 00
90489	Green Leaf	Halifax	44	Eph. Julien	W. Chezzetcook.	12	116 00
103544	Grace D.	do	10	Jas. Marryatt	Pennant	3	28 00
88220	Grandee	do	14	Jno. P. Slaunwhite	Terence Bay	3	32 00
83306	I. O. N. A	do	26	Andrew Sullivan	Herring Cove	8	74 00
94661	L. C. Tough	do	12	Jno. E. Tough	Pennant	3	30 00
94665	Louis Luby	do	41	Simon Lapierre	W. Chezzetcook.	12	113 00
75605	Little Annie	do	27	Mathew Lynch, jr	Ferguson's Cove	6	63 00
69105	Lady of the Lake	do	20	Richard Christian	Upper Prospect.	5	50 00
100249	Minnie M	do	10	Jno. Martin	West Ship Harbour	4	34 00
96805	Maggie May	do	62	Jeremiah Fillis	W. Chezzetcook.	16	158 00
100580	Maggie E. C	Lunenburg	20	David F. Covey	Hagget's Cove	7	62 00
85664	Mary E.	Halifax	14	Andrew Twohig	Pennant.	3	32 00
100238	Mary Bell	do	10	Jno. A. McDonald	Harrigan Cove	4	34 00
100227	May	do	10	T. E. Little	Terence Bay	3	28 00
100254	Myrtle M. Gray	do	19	James Gray	Pennant	6	55 00
69213	May Fly	Lunenburg	12	Jno. A. Neville	Halifax	3	30 00
80841	Nina	Halifax	13	Wm. E. Murphy	Owl's Head	4	37 00
85665	Nellie D	do	12	Daniel Smith	Sambro	3	30 00
103539	Neva	do	11	Eph. Marryatt	Pennant	3	29 00
100245	Oracle	do	18	W. McC. Boak	Halifax	4	42 00
85562	Oresa	do	14	Lawson Corkum	East Jeddore	5	44 00
100241	Pansy	do	32	Geo. Schnair	Pennant	7	74 00
92571	Primrose	do	14	Angus Gray	do	5	44 00
100474	R. Beatrice	do	19	James Morash, jr.	West Dover	5	49 00
75595	Rising Dawn	Lunenburg	18	Fredk. Boutilier	Indian Harbour.	5	48 00
77787	Rescue	Halifax	20	Albert Lantz	East Dover	5	50 00
100255	Seaflee	do	12	James Stevens	Porter's Passage	4	36 00
69082	St. Agnes	do	30	Ebenezer Homans.	Clam Harbour	3	48 00
64869	Sarah L. Oxner	do	34	Edward Hayes	Herring Cove	10	94 00
103193	Startle	Liverpool	11	Chas. F. Martin	Halifax	4	35 00
103531	True Love	Halifax	10	James Howard	Terence Bay	3	28 00
77836	T. W. Smith	do	35	Charles Beaver	Spry Bay	6	71 00
100260	Violet	do	12	J. H. Smith	Sambro	3	30 00
90485	Violet West.	do	36	T. A. Gaetz	Seaforth	8	84 00
96781	Venture	do	43	E. Dempsey	Herring Cove	12	115 00
100226	Willie H. Crosby	do	65	James Julien	W. Chezzetcook.	17	167 00
92578	Willetta	do	12	Joseph Gray	Sambro.	3	30 00
61904	Water Lily	do	14	Isaac Morash	West Dover	2	26 00
85378	Zephyr	do	16	Robt. Slaunwhite	Terence Bay	5	46 00

HANTS COUNTY.

75614	Fawn	Digby	17	Henry E. Ogilvie	Summerville	4	41 00

List of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

INVERNESS COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103320	Ben Hur	Pt. Hawkesbury	61	Wm. H. Paint	Pt. Hawkesbury	*	61 00
96778	Campania	do	11	C. Robin, Collas & Co., Ltd.	Eastern Harbour	4	35 00
103313	Catherine	do	10	Severin Chiasson	do	4	34 00
83244	Claribel	Charlottetown, P. E. I	19	Chas. Doucet	do	5	49 00
96767	Dove	Pt. Hawkesbury	49	Wm. H. Paint	Pt. Hawkesbury	7	91 00
96768	Elizabeth Ann	do	11	Magloire Poirier	Cheticamp Point	4	35 00
96774	Florence	do	11	Thomas Poirier	Eastern Harbour	4	35 00
103317	Flying Star	do	11	P. Desveau & S. Belfontaine	do	4	35 00
103312	Laura	do	13	Joseph Aucoin	do	5	43 00
103316	Laura	do	10	U. & D. Bourgeois	do	4	34 00
103315	Lillie	do	12	Fidèle Chiasson	do	4	36 00
103318	Little Heir	do	19	Eusebe Chiasson	do	5	49 00
96775	Louise	do	11	L. & P. Boudrot	do	4	35 00
96779	Majestic	do	12	C. Robin, Collas & Co. Ltd	do	4	36 00
96771	Marie	do	10	John Roach	do	4	34 00
96777	Marie Joseph	do	11	Victor Roach	do	4	35 00
103314	Mary	do	10	Paul J. Aucoin	do	4	34 00
96769	Mary Lambert	do	11	Luke Chiasson	do	4	35 00
69125	May Flower	Halifax	20	Hyacinthe Chiasson	do	6	56 00
96770	O. L. B.	Pt. Hawkesbury	12	Gabriel Boudrot	do	4	36 00
96773	Virgin	do	10	Michel Ramard	do	4	34 00
96776	Willie B	do	11	Henry J. Roach	do	4	35 00

KING'S COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
100746	Sarah Jane	Windsor	15	Watson Brewster	Baxter's Harb'r.	3	33 00
100744	Sea Queen	do	18	Frank Curry	Harbourville	4	42 00

LUNENBURG COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
103507	Annie	Lunenburg	16	C. U. Mader	Mahone Bay	5	46 00
100846	Albatross	do	26	Abraham Ernst	do	7	68 00
103745	Avis	do	80	Albert V. Conrad	Park's Creek	17	182 00
103495	Athlon	do	80	J. Norman Rafuse	Conquerall	17	182 00
94790	Abana	do	80	James Romkey	La Have	17	182 00
94783	Alaska	do	80	Norman Smith	Ritcey's Cove	17	182 00
100170	Atlanta	do	80	Freeman Anderson	Lunenburg	17	182 00
100472	Arcana	do	80	Alex. Knickle	do	17	182 00
100489	Algoma	do	56	Abraham Ernst	Mahone Bay	13	134 00
94778	Argosy	do	80	Wm. Gaetz	Lunenburg	15	170 00
100839	Acalia	do	34	Nathan Silver	do	5	64 00
103503	B. G. Anderson	do	80	Thomas Hamm	do	17	182 00
100838	Blanche A. Colp	do	80	C. U. Mader	Mahone Bay	17	182 00
103430	Beluga	do	80	Albert V. Conrad	Park's Creek	18	188 00
94647	Bonus	do	80	Jno. M. Ritcey	Ritcey's Cove	14	164 00
94651	Bessie A.	do	80	Murdoch McGregor	do	14	164 00
103501	Barcelona	do	80	Jno. M. Ritcey	do	17	182 00
100848	Britannia	do	59	Lambert Lohnes	La Have	12	131 00
100571	Britannia	do	80	Charles Smith	Lunenburg	17	182 00
96823	Burnham H.	do	80	Benjamin Morash	do	17	182 00
94782	Bona Fides	do	80	J. Joseph Rudolph	do	17	182 00
103421	Blenheim	do	80	Charles Smith	do	17	182 00
96828	Bonanza	do	80	Charles Silver	do	15	170 00
103755	Basil M. Geldert	do	80	John B. Young	do	17	182 00

* Crew not entitled to bounty.

LIST of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

LUNENBURG COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
94645	C. A. Chisholm	Lunenburg	80	Abraham Ernst	Mahone Bay	16	176 00
94658	C. A. Ernst	do	57	do	do	13	135 00
100159	C. U. Mader	do	80	C. U. Mader	do	17	182 00
103427	Cambrian	do	60	Dean Fralick	La Have	15	150 00
103502	Carlraine	do	80	Alvin Himmelman	Ritcey's Cove	16	176 00
100579	Citizen	do	80	Murdoch McGregor	do	16	176 00
97081	Carrie	do	80	John M. Ritcey	do	14	164 00
97084	Calla Lily	do	62	Simon Hirtle	La Have	14	146 00
100834	Comrade	do	80	W. Norman Reinhardt	Getson's Cove	17	182 00
100823	Carrie	do	60	Adnah Burns	Dayspring	15	150 00
90857	Capio	do	72	G. N. C. Hawkins	Lunenburg	12	144 00
103415	Clarence Smith	do	80	Abram Smith	do	19	194 00
90869	Clara E. Mason	do	80	David Smith	do	15	170 00
103419	Cordova	do	80	Charles Smith	do	15	170 00
103756	Crescent	do	80	Joseph Rudolph	do	17	82 00
100483	Curfew	do	49	Jno. D. Sperry	Petite Rivière	10	109 00
88355	D. A. Mader	do	80	C. U. Mader	Mahone Bay	16	176 00
90834	Diego	Port Medway	28	Harris Conrad	Vogler's Cove	10	88 00
100841	Dora	Lunenburg	80	James A. Hirtle	Lunenburg	15	170 00
97089	Dictator	do	80	S. Watson Oxner	do	17	182 00
88356	Energy	do	80	C. U. Mader	Mahone Bay	16	176 00
103424	Elva M.	do	80	do	do	17	182 00
94659	Enterprise	do	80	Wm. Cleversey	Pleasantville	17	182 00
100827	Elnora	do	52	Zenas Gerhardt	Middle South	10	112 00
94960	Eureka	do	80	Reuben Smith	Ritcey's Cove	14	164 00
96821	Edgar T. Richard	do	55	Elias Richard, sr.	Getson's Cove	14	139 00
103506	Ebro	do	75	J. Wm. Young	Lunenburg	15	165 00
100151	Erminie	do	80	Wm. Young	do	17	182 00
83308	Ella	Liverpool	10	J. C. Hanson	Mahone Bay	2	22 00
103198	F. B. Wade	Lunenburg	80	L. B. Currie	West Dublin	17	182 00
103743	Flo. F. Mader	do	80	C. U. Mader	Mahone Bay	18	188 00
103429	Fern	do	70	Edmen Walters	La Have	16	166 00
92638	Florence M	do	80	J. Alex. Silver	Lunenburg	15	170 00
90582	G. A. Smith	do	80	Jno. M. Ritcey	Ritcey's Cove	16	176 00
103411	Genevieve	do	80	Abraham Ernst	Mahone Bay	17	182 00
103505	Gladys May	do	80	Adam Selig	Vogler's Cove	20	200 00
103753	Gladys B. Smith	do	80	Benjamin C. Smith	Lunenburg	18	188 00
103752	Glydon	do	80	John M. Ritcey	Ritcey's Cove	14	164 00
97088	Glendale	do	37	Charles Bell	Lower Dublin	9	91 00
100488	Gurnet	do	56	Jno. M. Ritcey	Ritcey's Cove	10	116 00
90862	Grenada	do	80	Reuben Romkey	Lower LaHave	16	176 00
100825	Georgina	do	34	James Bell	Dublin Shore	7	76 00
100850	Grace	do	80	Daniel Getson	Getson's Cove	17	182 00
100480	Gallant	do	57	Elias Richard	do	13	135 00
97083	Garland	do	51	Jno. D. Sperry	Petite Rivière	10	111 00
96836	Gleaner	do	80	Wm. C. Acker	Lunenburg	15	170 00
94773	Galatea	do	80	Jno. B. Young	do	17	182 00
100576	Glad Tidings	do	80	J. Wm. Young	do	17	182 00
103744	Harry Smith	do	80	J. H. Wilson	do	17	182 00
100569	Howard Young	do	80	James Young	do	17	182 00
100490	Irene M. B.	do	66	Eli Ernst	Mahone Bay	16	162 00
96837	Irvin G	do	80	Freeman Spindler	LaHave	15	170 00
96830	J. A. Silver	do	80	Charles Silver	Lunenburg	17	182 00
94785	J. C. Schwartz	do	80	Charles Hewit	do	17	182 00
100164	J. H. Ernst	do	80	S. Watson Oxner	do	17	182 00
100837	J. M. Young	do	80	Wm. Young	do	17	182 00
94654	J. W. Geldert	do	80	S. Watson Oxner	do	17	182 00
103491	Jennie May	do	80	M. Westhaver	Martin's Brook	16	176 00
94789	Joseph McGill	do	80	Henry Ritcey	Ritcey's Cove	17	182 00
103414	Jeanie Myrtle	do	80	Jno. M. Ritcey	do	15	170 00
103202	L. B. Currie	do	80	L. B. Currie	West Dublin	17	182 00
96833	L. E. Young	do	80	Benjamin Anderson	Lunenburg	17	182 00
94780	Lawrence	do	80	Abraham Ernst	Mahone Bay	17	182 00
94788	Laura C. Zwicker	do	80	do	do	15	170 00

LIST of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

LUNENBURG COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
83316	Lottie	Port Medway	80	Samuel E. Teel	Vogler's Cove	16	176 00
103496	Loreana Maud	Lunenburg	80	David Ritcey	Ritcey's Cove	18	188 00
96827	Leopold	LaHave	80	Samuel Ritcey, jr.	do	17	182 00
100830	Lorraine C.	Lunenburg	61	Amiel Corkum	LaHave	15	154 00
103418	Leader	do	80	Alex. Knickle	Lunenburg	17	182 00
96832	Laura M. Knock	do	80	Allan Morash	do	17	182 00
90854	Latona	do	80	James R. Rudolph	do	16	176 00
103420	Luetta	do	80	David Smith	do	18	188 00
96838	La France	do	80	S. Watson Oxner	do	17	182 00
103510	M. J. Crosby	do	76	Charles Rafuse	LaHave	16	172 00
103412	Minnie B	do	25	Allan R. Morash	Lunenburg	5	55 00
57728	Mic-Mac	Halifax	34	Allan Westhaver	do	4	58 00
103757	Minnie J. Heckman	Lunenburg	80	Murdoch McGregor	Ritcey's Cove	20	200 00
103413	Martello	do	65	Abraham Ernst	Mahone Bay	13	143 00
97052	Minnie Maud	Liverpool	80	J. Samuel Wolfe	West Dublin	*	80 00
100844	Mystic Tie	Lunenburg	64	J. Norman Rafuse	Conquerall	14	148 90
103425	Majestic	do	80	Reuben Ritcey	Ritcey's Cove	18	188 00
103426	Melbourne	do	61	Edmund Hirtle	LaHave	12	133 00
100849	Merl M. Parks	do	80	James Wamback	Park's Creek	17	182 00
90823	Miletus	Port Medway	80	John Shankle	LaHave	15	170 00
96840	Mayflower	Lunenburg	60	Albert V. Conrad	Park's Creek	10	120 00
103422	Mischief	do	80	Thos. A. Wilson	Bridgewater	13	158 00
100840	Maritime	do	59	Francis Himmelman	LaHave	15	149 00
100162	Magic	do	45	John D. Sperry	Petite Rivière	11	111 00
103509	Maggie E. Z	do	70	Emmanuel Zellers	Feltzen South	17	172 00
94772	Molega	do	80	Benj. Anderson	Lunenburg	18	188 00
94775	Malabar	do	80	R. H. Griffiths	do	17	182 00
92632	Monarch	do	80	Allan R. Morash	do	15	170 00
100574	Melrose	do	71	do	do	13	149 00
103416	Minnie J. Smith	do	80	Wm. Smith	do	19	194 00
97100	Maggie M. W	do	80	J. H. Wilson	do	17	182 00
100153	Milo	do	80	J. Wm. Young	do	17	182 00
92640	Minerva	do	80	Wm. C. Acker	Lunenburg	15	170 00
94966	Nicanor	do	79	Davis Westhaver	Martin's Brook	16	175 00
100485	Nightingale	do	52	John Haughn	Getson's Cove	8	100 00
92636	Nonpareil	do	80	John Zinck	Lunenburg	17	182 00
88342	Nova Zembla	do	79	C. U. Mader	Mahone Bay	17	181 00
94779	O. P. Silver	do	80	Charles Silver	Lunenburg	17	182 00
103499	Olivette	do	80	Theophilus Creaser	Ritcey's Cove	17	182 00
94641	Ovando	do	80	Jeffrey Publicover	Getson's Cove	16	176 00
94786	Ontario	do	80	Wm. Smith	Lunenburg	15	170 00
100486	Pandora	do	53	Abraham Cook	Feltzen South	14	137 00
94774	Puritan	do	80	Theophilus Creaser	Ritcey's Cove	17	182 00
100483	Puma	do	58	Arthur Pentz	Pentz Settlement	13	136 00
100836	Panama	do	80	Henry Adams	Lunenburg	17	182 00
103747	Perfect	do	54	Nicholas Schmeisser	LaHave	11	120 00
53551	Roving Bird	Halifax	24	Joseph Langille	Oakland	2	36 00
100473	Rapture	Lunenburg	57	Alvin Moser	Middle South	15	147 00
100572	Rowena	do	51	Wm. Schmeisser	LaHave	15	141 00
96834	Robert F. Mason	do	80	Martin Mason	Lunenburg	16	176 00
100165	Snow Queen	do	67	Leander Meisner	Martin's Point	15	157 00
88349	Senovar	do	80	Nathan Hiltz	Martin's River	16	176 00
94962	Stella E.	do	80	Reuben Ritcey	Ritcey's Cove	16	176 00
94787	Samoa	do	80	James Geldert	Lunenburg	17	182 00
90868	Sadie	do	79	G. N. C. Hawkins	do	16	175 00
100471	Secret	do	80	Jno. B. Young	do	17	182 00
103500	St. Helena	do	80	Howard Wynacht	do	17	182 00
94657	T. W. Langille	do	71	Francis Conrad	Middle South	16	167 00
92623	Torridon	do	80	Murdoch McGregor	Ritcey's Cove	18	188 00
100575	Tyler	do	54	Edward Maxner	Lunenburg	14	138 00
103754	Talmouth	do	80	Frederick Remby	West Dublin	17	182 00
103742	Unique	do	80	Abraham Ernst	Mahone Bay	17	182 00

* Crew not entitled to bounty.

List of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

LUNENBURG COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103417	Uruguay	Lunenburg	80	Elijah Ritcey	Ritcey's Cove	17	182 00
97098	Uranian	do	80	David Heisler	Lunenburg	16	176 00
100821	Venus	do	76	J. W. Mills	Mahone Bay	15	166 00
94776	Volunteer	do	80	Murdoch McGregor	Ritcey's Cove	15	170 00
103504	Viking	do	80	Amiel Corkum	LaHave	17	182 00
83164	Valiant	do	80	Thomas Cook	Ritcey's Cove	16	176 00
94967	White Cloud	do	80	C. W. Mader	Mahone Bay	17	182 00
96829	Westeria	do	80	Freeman Anderson	Lunenburg	17	182 00
100152	Werra	do	80	David Smith	do	17	182 00
100842	W. H. Walters	do	80	Thomas Walters	do	17	182 00
100833	Yucatan	do	80	Joseph Rudolph	do	17	182 00
PICTOU COUNTY.							
83134	Infant	Lunenburg	15	Johnston Rhynard	Pictou	3	33 00
QUEEN'S COUNTY.							
85478	Glenora	Liverpool	76	James C. Inness	Liverpool	16	172 00
103191	Jennie B	do	13	Wm. Vogler	Port Jolli	4	37 00
61510	Mansimalo	Shelburne	50	Edwin Morine	Port Medway	12	122 00
94833	News Boy	Liverpool	16	Alexander Shankle	Port Matoon	4	40 00
103194	Oressa	do	10	Joseph Hagan	Hunt's Point	4	34 00
61916	Only Son	do	10	Wm. Conrad	Liverpool	3	28 00
103199	Trilby	do	12	Wm. Wigglesworth	do	3	30 00
83495	Utopia	do	80	James C. Inness	do	20	200 00
RICHMOND COUNTY.							
77544	Alpha	Arichat	42	Wm. J. Levisconte	River Bourgeois.	10	102 00
88456	Alice May	do	39	do	do	10	99 00
36474	Alexander Fraser	Lunenburg	32	Anselme Sampson	do	9	86 00
69143	Arequipa	Arichat	36	Philip Gruchy	D'Escousse	5	66 00
38051	B. Weir & Co.	do	25	John Shanahan	Basin	5	55 00
75561	Boreas	Lunenburg	41	John Colford	Port Richmond.	8	89 00
54156	British Lady	Halifax	19	Albert Joyce	Riv. Inhabitants	1	25 00
35996	Blue Bell	Arichat	25	Thomas Duyon	Martinique	3	43 00
94680	Bonnie Glen	Halifax	17	Sylvester Boudrot	Petit de Grat	4	41 00
72061	C. P. M.	Arichat	22	Alexander Burke	River Bourgeois.	6	58 00
74100	Candid	do	23	Désiré Burke	do	7	65 00
103452	Charlotte	do	73	David Walker	Basin River Inhabitants	13	151 00
88459	Caroline	do	12	John B. Gerrior	West Arichat	2	24 00
72058	Daisy	do	34	P. Richard	Arichat	4	58 00
83395	Elerie	Halifax	29	Lewis Murray	Port Richmond.	3	47 00
83083	Emma Proctor	Pt. Hawkesbury	41	Edward Proctor.	Riv. Inhabitants	8	89 00
80994	Esperance	Guysboro'	10	Joseph Petitpas.	Arichat	3	28 00
103454	Ethel B.	Arichat	10	Edward Leblanc	Poulamond.	3	28 00
88462	Fannie S	do	28	Docithé Fougère	River Bourgeois.	9	82 00
88599	Guide	Halifax	38	Edward Poirier	L'w'r D'Escousse	11	104 00
100161	Hilda Maude	Pt. Hawkesbury	46	Jno. G. Murray.	Port Richmond.	3	64 00
96764	Ida C. Spoffard	do	54	Robert Murray	do	7	96 00
83135	J. B. M.	Halifax	20	Samuel P. Burke	St. Peter's	6	56 00
80972	John Vincin	Sydney	17	Simon Delorey	Janvrin Island	4	41 00
85560	Jacques	Yarmouth	58	Frederick Poirier	D'Escousse	15	148 00
88467	Katie	Arichat	11	Frank Sampson	Poulamond	4	35 00
38516	Lady of the Lake	do	26	Peter Landry	St. Peter's	8	74 00
96763	Lelia Linwood	do	67	Wm. J. Levisconte	River Bourgeois.	15	157 00

List of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

RICHMOND COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
72071	Lumen Diei	Arichat	20	Urbain Sampson	do	5	50 00
74054	Laura E. Douglas	Barrington	39	Joseph A. Steele	Port Richmond	6	75 00
88455	Laura Victoria	Arichat	39	Henry McDonald	D'Escousse	11	105 00
38522	Mary	do	23	Isaiah Boudrot	River Bourgeois	7	65 00
100380	Mary D.	Sydney	27	Simon Devoe	St. Peter's	7	69 00
88464	Mary E.	Arichat	10	Charles DeWolf	Arichat	3	28 00
88463	Maria	do	14	Andrew Boudrot	Petit de Grat	3	32 00
85388	Mary Alice	Halifax	21	Wm. Malcolm & Sons	Port Malcolm	7	63 00
38417	Messenger	Arichat	30	James Butler & Co	Halifax	7	72 00
72063	May Flower	do	12	Jno. Burke	River Bourgeois	2	24 00
72048	Neptune	do	26	Henry Sampson	do	6	62 00
74365	Nova Stella	do	53	Léon Poirier	D'Escousse	14	137 00
61630	Olive	Halifax	57	John Malcolm	Port Malcolm	9	111 00
54139	Ocean Belle	do	20	Isidore Fougère	Poulamond	8	68 00
38462	Partners	Arichat	26	Thomas Sampson	River Bourgeois	5	56 00
72067	Philomene D	do	22	John Pelham	Janvrin Island	3	40 00
46485	Quickstep	Pt. Hawkesbury	52	John Murray, jr	Port Richmond	7	94 00
64033	Ripple	do	34	Geo. Cruickshank	do	3	52 00
75763	Ripple	Arichat	17	Daniel McDonald	Basin	2	29 00
88439	Ripple	Halifax	20	Isidore Boudrot	Petit de Grat	4	44 00
73119	Royal	Pt. Hawkesbury	12	Wm. McDonald	Basin	2	24 00
88465	Stella	Arichat	46	A. J. Boyd	River Bourgeois	12	118 00
53603	Sea Flower	Charlottetown, P.E.I	26	Robert Joyce	D'Escousse	4	50 00
85645	Sissie Belle	Halifax	40	Firmin Fougère	Poulamond	10	100 00
92599	Thistle	Sydney	11	Simon Monbourquette	L'Ardoise	3	29 00
38523	Victoria	Arichat	24	Henry Burke	St. Peter's	7	66 00
57662	Village Bride	Halifax	24	Peter Malcolm	Port Malcolm	6	60 00
71034	Vanguard	Arichat	51	Dominique Boudrot	Petit de Grat	7	93 00

SHELBURNE COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
97034	A. D'E.	Yarmouth	15	David H. Blades	Upper Wood's Harbour	4	39 00
94632	A. C. Greenwood	Shelburne	15	Hugh M. Perry	Black Point	5	45 00
90655	Annina	Yarmouth	12	George Pike	Coffin's Croft	5	42 00
100612	Ardella	Shelburne	10	Peter M. Crowe	Sandy Point	3	28 00
100617	Altona	do	28	Austin Swansburg	Little Harbour	8	76 00
100620	Alina	do	80	Churchill Locke	Lockeport	19	194 00
88551	Blanche M. Thorbourne	do	80	Jno. H. Thorbourne	Jordan Bay	19	194 00
103186	Brittania	do	11	Ross Enslow	Green Harbour	4	35 00
103187	Ben Bolt	do	80	Clifford Locke	Lockeport	20	200 00
100604	Bella H. McKinnon	do	35	do	do	9	89 00
100813	Blanche	Barrington	24	Reuben Swim	Clarke's Harbour	7	66 00
94942	Coronilla	Shelburne	28	Wm. H. Kenney	do	11	94 00
96970	Charlie Richardson	do	26	Jno. B. Hardiug	Rockland	8	74 00
100819	David James	Barrington	27	Jno. F. Duncan	Clarke's Harbour	8	75 00
100605	Dawn	do	49	Angus N. Smith	Barrington	13	127 00
100613	Dove	Shelburne	80	Jno. M. Harding	Osborne	10	140 00
83492	Dessie	Liverpool	11	E. A. Capstick	Lockeport	*	11 00
77603	Eldon C.	Barrington	27	Joseph N. Nickerson	Port La Tour	5	57 00
97023	Edwina	do	11	Alward Trott	Stoney Island	4	35 00
85731	Eva L. H.	Shelburne	62	Albert E. Thorbourne	Sandy Point	14	146 00
96976	Edith	do	40	Enos Churchill	Lockeport	8	88 00
90645	Fly	Yarmouth	16	Chas. M. Wickens	Shag Harbour	6	52 00
85476	Fleetwing	Shelburne	15	Wilson Sperry	Green Harbour	6	51 00
103065	Garnet	Yarmouth	27	Thomas W. Crowell	Baccaro	8	75 00
100818	Geneva Ethel	Barrington	29	Jno. W. Kenney	Clarke's Harbour	13	107 00
100815	Happy Home	do	10	Wm. E. Smith	Up. Port La Tour	5	40 00

* Crew not entitled to bounty.

List of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Con.*

SHELBURNE COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
90647	Hattie Emeline	Yarmouth	11	Chas. A. Reynolds	Up. Port La Tour	4	35 00
100607	Icelda	Shelburne	19	Clifford Locke	Lockeport	6	55 00
103174	Iona	do	15	Charles Page	Rockland	6	51 00
90440	Jennie Fredrica	Barrington	40	Peter Kenney.	Clarke's Harbour	13	118 00
85689	James Beckwith	do	31	B. C. Newell	do	4	55 00
94941	John Purney	Shelburne	80	Geo. H. King	Shelburne	22	212 00
88554	Jersey Lily	do	80	Enos Churchill	Lockeport	21	206 00
73967	Katie	Liverpool	14	Churchill Locke	do	2	26 00
90438	Lark	Barrington	13	Saml. S. Atwood	Oak Park	4	37 00
80624	Lima	Yarmouth	12	Wm. Halliday	Bear Point	1	18 00
100816	Mattie Morrissey	Barrington	24	Thomas Smith	Newellton	9	78 00
92568	Mary Kate	Shelburne	13	Samuel Rudolph	Church Over	6	49 00
83434	Mary May	Barrington	20	Adam J. Firth	Shelburne	8	68 00
103184	Mayflower	Shelburne	26	Nathaniel Vernon	Sandy Point	4	50 00
100614	May Flower	do	11	Uriah Williams	Green Harbour	4	35 00
103177	Mayflower	do	12	Alfred Swim	Lockeport	4	36 00
103057	May Flower	Yarmouth	12	Samuel Greenwood	Shag Harbour	4	36 00
103712	Marguerite	do	10	Freeland Brannen	Lower Wood's Harbour	5	40 00
103173	Mabel	Shelburne	21	Jno. Mathews	Rockland	7	63 00
103175	Myrtle	do	10	Geo. S. Decker, sr	Little Harbour	3	28 00
83493	Mary C.	Liverpool	80	Wm. McMillan	Lockeport	19	194 00
103182	Meta	Shelburne	18	Clifford Locke	do	6	54 00
103782	Oasis	do	80	Jno. A. McGowan	Shelburne	22	212 00
90439	Oscar F.	Barrington	18	Henry A. Penny	South Side	7	60 00
100820	Ranger	do	11	Thomas K. Nickerson	Doctor's Cove	2	23 00
100319	Rob Roy	Yarmouth	12	James E. Nickerson	Wood's Harbour	5	42 00
92320	Rialto	Shelburne	46	Albert E. Thorbourne	Sandy Point	8	94 00
75595	Ripple	Yarmouth	19	Vincent Brannen	Wood's Harbour	1	25 00
77956	Speed	do	13	Robert Nickerson	Upper Wood's Harbour	2	25 00
103783	Springwood	Shelburne	80	Wm. McMillan.	Lockeport	21	206 00
90433	Ste. Anne	Barrington	11	Frank A. Smith	Newellton	2	23 00
100616	Sea Slipper	Shelburne	11	James Enslow, jr.	Green Harbour	5	41 00
96961	Tivoli	do	24	Wm. J. Doane	Red Head	6	60 00
103179	Trilby	do	31	Wm. McMillan	Lockeport	9	85 00
100608	Vesper	Shelburne	14	George S. Decker	Little Harbour	5	44 00
90430	Will Carleton	Barrington	80	James Snow	Upper Port La Tour	17	182 00
100812	Wyvern	do	25	Oscar F. Swim	Clarke's Harbour	9	79 00
103183	Wren	Shelburne	18	Wm. McCarthy	Shelburne	4	42 00
77744	Whip-poor-will	do	17	Jno. Littlewood	Ingomar	5	47 00
75722	Yuba	Yarmouth	15	Chas. E. Crowell	Port La Tour	5	45 00

VICTORIA COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
97042	Sea Bird	Halifax	17	Peter B. McDonald	McKinnon's Harbour	2	29 00

YARMOUTH COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
94980	Aurore	Yarmouth	80	Leon D'Eon	West Pubnico	16	176 00
80647	Annie M. Bell	do	64	Zacharie D'Eon	do	17	166 00
88267	Bessie May	do	23	Frank M. Killam	do	*	23 00
94977	Civilian	do	80	Charles D'Entremont	do	18	188 00
85536	Circassian	do	80	A. F. Stoneman	Yarmouth	21	206 00
88403	David Sprague	do	31	Theodore V. Surette	Surette's Island	12	103 00
103053	Eddie C	do	11	James F. Harding	Lower Argyle	2	23 00

* Crew not entitled to bounty.

LIST of Vessels which received Fishing Bounty, &c.—Nova Scotia—*Continued.*

YARMOUTH COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103066	Eddie J	Yarmouth	23	Anthony D'Entremont	West Pubnico	9	77 00
97036	Eva	do	10	Gabriel Bourke	Bourke's Cove	3	28 00
85551	Ethel	do	80	J. H. Porter & Co	Tusket Wedge	19	194 00
90654	Flora	do	64	David D'Entremont	West Pubnico	20	184 00
94972	Florence	do	11	Joshua Boudreau	Tusket Wedge	5	41 00
100315	Freddie A.	do	10	Alex. Hemlow	Yarmouth	4	34 00
100535	Fairplay	do	11	Josiah B. Lewis	do	*	11 00
90885	Georgina	do	80	N. B. Lewis	do	21	206 00
80643	Hazel Dell	do	80	James Amiro	West Pubnico	20	200 00
100327	Hattie	do	10	Robert Ellenwood	Yarmouth	4	34 00
100326	Helena	do	14	Webster Hamilton	Lower Argyle	4	38 00
88587	Jessie May	do	14	Geo. A. Hemlow	Yarmouth	3	32 00
80614	Louise	do	80	J. H. Porter & Co.	Tusket Wedge	16	176 00
103059	Lady Bourque	do	11	Joseph O. Bourque	do	1	17 00
103709	Lizzie E	do	14	Juston Ellis	Port Maitland	5	44 00
88596	M. A. Louis	do	64	A. F. Stoneman	Yarmouth	19	178 00
88583	Mary O'Dell	do	14	Levi Robicheau	do	3	32 00
90659	N. A. Laura	do	59	Julien D'Entremont	West Pubnico	15	149 00
90892	Nellie	do	59	J. H. Porter & Co.	Tusket Wedge	14	143 00
103705	Nebula	do	24	Ferdinand Amiro	West Pubnico	11	90 00
85553	Onyx	do	80	Edward F. Parker	Yarmouth	19	194 00
90873	Primrose	do	34	H. T. D'Entremont	L. E. Pubnico	7	76 00
103706	Regine	do	10	Wm. D'Entremont	West Pubnico	3	28 00
100313	Souvenir	do	71	S. D. D'Entremont	do	21	197 00
100323	Senora	do	80	Marc A. Surette	do	21	206 00
75724	Sea Foam	do	75	J. H. Porter & Co	Tusket Wedge	11	141 00
83254	Sea Foam	Annapolis	28	Joseph L. Amiro	L. E. Pubnico	7	70 00
96962	Sunrise	Yarmouth	18	Cereno Johnson	Yarmouth	2	30 00
88589	Sanford	do	20	Nathaniel Pierce	L. E. Pubnico	5	50 00
90895	Union St. Pierre	do	19	Frank Nickerson	Pubnico	7	61 00
90897	Wrasse	do	56	A. F. Stoneman	Yarmouth	16	152 00
90882	Will o' the Wisp	do	51	do	do	14	135 00
90896	Wapiti	do	80	do	do	17	182 00
85559	Willie F	do	12	Riley W. Haskell	Port Maitland	4	36 00
103704	Whisper	do	31	C. L. D'Entremont	West Pubnico	9	85 00

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* Crew not entitled to bounty.

LIST of Fishing Vessels which received Fishing Bounty, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK.

CHARLOTTE COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103124	Addie B	St. Andrew's	13	Arthur Ramsdell	Whitehead Isl'd.	2	25 00
94727	Aurelia	St. John	22	James Scoville	Flagg's Cove	4	46 00
83469	Austin P	St. Andrew's	12	Chas. M. Stuart	Lord's Cove	3	30 00
103127	Avis C. Tobey	do	13	Henry H. Bancroft	Woodward's Cove	2	25 00
64011	Bee	do	18	R. L. Lawson	North Head	5	48 00
103128	Britannia	do	22	Charles Sinclair	Castalia	3	40 00
88409	Carrie	Digby, N.S.	12	Thos. A. Cook	La Tête	2	24 00
88290	Crusoe	St. Andrew's	13	James Starkey	St. Andrew's	3	31 00
59375	Cadet	do	19	Ethelbert Savage	Wilson's Beach	5	49 00
35338	Caroline	do	18	Henry Stuart	Lord's Cove	3	36 00
103118	Della F. Tarr	do	34	Henry Greenwood	Wilson's Beach	7	76 00
74326	Dreadnaught	Yarmouth, N.S.	19	Alfred Stanley, sr.	Flagg's Cove	2	31 00
80803	Exenia	Windsor, N.S.	18	Wm. F. Parker	Beaver Harbour.	5	48 00
80882	Ella Mabel	St. Andrew's	14	Walter Calder, jr.	Welchpool	4	38 00
94834	Flora Wooster	do	22	Andrew McGee	Back Bay	2	34 00
88276	Falcon	do	12	John F. Cronk	Flagg's Cove	5	42 00
92511	Fleet Wing	do	11	Alden McFarland	do	3	29 00
97146	Free Trade	do	10	Lorenzo Watt	do	3	28 00
75601	Flash	Digby, N.S.	10	Albert E. Coggins	Westport, N.S.	3	28 00
97150	Gleaner	St. Andrew's	13	Frank Newman	Wilson's Beach	2	25 00
94839	Harrie	do	14	Wm. J. Tucker	La Tête	3	32 00
83463	Havelock	do	33	Wm. James	Wilson's Beach	5	63 00
103119	Hortense	do	15	Wm. J. Morse	Whitehead Isl'd.	3	33 00
80650	Happy Home	Yarmouth, N.S.	14	John A. Doon	Black's Harbour	3	32 00
103121	Island Girl	St. Andrew's	17	Frank Ingersoll	Flagg's Cove	2	29 00
51965	John E. Dennis	do	18	Alfred Stanley	do	3	36 00
59342	Lizzie S. McGee	do	14	Andrew McGee	Back Bay	4	38 00
88273	Lillian E	do	13	do	do	3	31 00
77766	Laconic	Shelburne, N.S.	15	John Dixon	North Head	4	39 00
88407	Linnet	Digby, N.S.	15	James Scovil	Flagg's Cove	1	21 00
103117	Margaret	St. Andrew's	49	Frank L. Dixon	Beaver Harbour.	8	97 00
85442	Mystery	do	14	C. Dixon & J. Moses	Flagg's Cove	3	32 00
92514	Maggie Jane	do	10	John Thomas, jr	North Head	3	28 00
94837	Olga	do	11	Thos. Richardson	Lord's Cove	3	29 00
92518	Peril	do	18	G. Dixon & M. Eldridge	Beaver Harbour.	5	48 00
75591	Rise and Go	do	16	William Sirls	Wilson's Beach	3	34 00
88272	Simeon H. Bell	do	14	C. Dixon & J. Moses	Flagg's Cove	2	26 00
103992	S. K. Wilson	do	11	Henry Lambert	Woodward's Cove	3	29 00
88414	Trumpet	St. John	20	Geo. U. Wright	Beaver Harbour.	5	50 00
59387	Telephone	St. Andrew's	19	James Brown, jr.	Wilson's Beach	5	49 00
103129	Uncle Sam	do	11	J. G. Fraser	Woodward's Cove	3	29 00
94832	Venus	do	42	Simon Brown	Wilson's Beach	5	72 00
88282	Veritas	do	10	Simon Leonard	Leonardville	*	10 00
103125	Virgin Queen	do	16	Nelson Morse	Whitehead Isl'd.	5	46 00
77969	Wave Queen	do	11	H. W. Foster	Grand Harbour.	3	29 00
92512	Water Witch	do	11	Robert A. Main	Woodward's Cove	4	35 00

GLOUCESTER COUNTY

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
100984	Alice	Chatham	11	C. Robin, Collas & Co., Ltd.	Caraquet	3	29 00
103279	Alice Maud	do	10	do	do	4	34 00

* Crew not entitled to bounty.

LIST of Vessels which received Fishing Bounty, &c.—New Brunswick—*Con.*

GLOUCESTER COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
96739	Angeline	Chatham	14	Joseph C. Doiron	Caraquet	5	44 00
103085	Argentina	do	12	V. Lanteigne	do	4	36 00
103071	Anglesea	do	12	H. Le Boutillier	do	3	30 00
100987	Arabi	do	12	Philip Rive	do	3	30 00
103769	Alma	do	11	Jno. B. Sirois	do	3	29 00
103081	Albatross	do	13	Thomas Ahier	Shippegan	3	31 00
103763	Alouette	do	10	do	do	4	34 00
103073	Anna	do	11	W. S. Loggie	Chatham	4	35 00
92419	Anna	do	12	Docithé Chiasson	Lamèque	3	30 00
100960	Annie M	do	11	W. S. Loggie	Chatham	4	35 00
103009	Adeline Gladys	do	12	J. & R. Young	Shippegan	3	30 00
72099	Adeline	do	12	Clément Lanteigne	Lamèque	3	30 00
97194	Alika	do	12	Lange Paulin, sr.	do	3	30 00
100983	Bee	do	11	C. Robin, Collas & Co., Ltd	Caraquet	3	29 00
61431	Bee	do	11	Paul Noel	Lamèque	3	29 00
103589	Blenheim	do	13	C. Robin, Collas & Co., Ltd	Caraquet	3	31 00
100299	Blanchard	do	12	do	do	3	30 00
100780	Britannic	do	12	C. Hubbard	do	3	30 00
100975	Big Bear	do	10	R. Young & Son	do	3	28 00
103072	Ben Hur	do	11	J. & R. Young	Shippegan	4	35 00
72079	Betsy	do	13	Sebastien Noel	Lamèque	4	37 00
100909	Blue Nose	do	11	Joseph Sewell	Caraquet	3	29 00
103780	Britannia	do	13	W. Fruing & Co.	do	4	37 00
103271	Celia	do	11	Dom. Gallien	do	3	29 00
100774	Calliope	do	12	P. Rive	do	4	36 00
103585	Cerdric	do	14	do	do	4	38 00
100988	Cæsar	do	10	do	do	5	40 00
100971	Cyprian	do	10	Elie Sivret	do	3	27 00
100784	Charlotte	do	13	Robt. Young & Son	do	3	31 00
100789	Chazalie	do	11	do	do	3	29 00
100916	Cygnet	do	12	C. Robin, Collas & Co., Ltd	do	3	30 00
101000	Condor	do	10	Thomas Ahier	Shippegan	3	28 00
103083	Corsair	do	10	do	do	3	28 00
96730	Christina	do	11	C. Robin, Collas & Co., Ltd	Caraquet	4	35 00
100917	Dora	do	11	do	do	3	29 00
100915	Dawn	do	12	do	do	3	30 00
100999	Dove	do	11	Thos. Ahier	Shippegan	4	35 00
100913	Daffodil	do	10	do	do	3	28 00
103076	Dipper	do	12	W. S. Loggie	Chatham	3	30 00
92412	Dollie Dutton	do	13	J. & R. Young	Shippegan	4	37 00
103590	Eliza	do	13	C. Robin, Collas & Co., Ltd	Caraquet	3	31 00
100293	Eliza	do	15	R. Young & Son	do	4	39 00
100772	Estelle	do	13	P. Rive	do	3	31 00
100905	Evangeline	do	10	do	do	4	34 00
100786	Empress	do	12	Robt. Young & Son	do	3	30 00
100787	Ethel	do	11	do	do	3	29 00
100998	Eagle	do	10	Thos. Ahier	Shippegan	4	34 00
100911	Emperor	do	10	do	do	3	28 00
96737	Elmina	do	11	Jacques Noel	Lamèque	3	29 00
103776	Esk	do	14	R. Young & Son	Caraquet	3	32 00
61405	Fly	do	11	Alex. McLaughlin	Tracadie	4	35 00
100977	Fly	do	12	C. Robin, Collas & Co., Ltd	Caraquet	3	30 00
96736	Fly	do	14	J. & R. Young	Shippegan	3	32 00
85699	Four Sisters	do	10	Marcel Caron	Caraquet	4	34 00
100782	Flying Foam	do	12	Robt. Young & Son	do	3	30 00
103001	Falcon	do	10	Thomas Ahier	Shippegan	3	28 00
100912	Foam	do	10	do	do	3	28 00
103077	Fame	do	10	W. S. Loggie	Chatham	3	28 00

LIST of Vessels which received Fishing Bounty, &c.—New Brunswick—*Con*

GLOUCESTER COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
100298	Fisher	Chatham	12	Elie Chiasson	Little Lamèque	4	36 00
61445	Flavie	do	13	Théophile Duguay	do	4	37 00
92418	Grip	do	12	James Davidson	Tracadie	3	30 00
100968	Gem	do	11	C. Robin, Collas & Co., Ltd	Caraquet	3	29 00
96733	Gem	do	12	J. & R. Young	Shippegan	4	36 00
100778	Gambetta	do	13	C. Hubbard	Caraquet	3	31 00
100954	Gazelle	do	10	do	do	3	28 00
100919	Gazelle	do	12	C. Robin, Collas & Co., Ltd	do	3	30 00
100910	Gleaner	do	13	Luc Lanteigne	do	3	31 00
100993	Garfield	do	10	P. Rive	do	4	34 00
100964	Gladstone	do	10	do	do	3	28 00
100992	Great Mogul	do	11	P. Rive	Caraquet	3	29 00
100989	Gladiator	do	11	do	do	3	29 00
100790	Guiding Star	do	11	R. Young & Son	do	3	29 00
103282	Gilnockie	do	11	do	do	2	23 00
103086	Gipsey	do	20	W. S. Loggie	Chatham	5	50 00
100906	Hotspur	do	10	P. Rive	Caraquet	3	28 00
100994	Hercules	do	10	do	do	4	34 00
100903	Hope	do	12	R. Young & Son	do	3	30 00
61425	Hope	do	13	C. Robin, Collas & Co., Ltd	do	4	37 00
103765	Hirondelle	do	11	T. Ahier	Shippegan	3	29 00
100956	Harold N	do	12	W. S. Loggie	Chatham	3	30 00
100997	Ivanhoe	do	10	T. Ahier	Shippegan	3	28 00
96724	Isabel	do	11	Pierre Noel	Lamèque	4	35 00
103931	Irene	do	12	W. Fruing & Co	Caraquet	3	30 00
103779	Ibis	do	11	do	do	4	35 00
100965	Josephine	do	11	P. Rive	do	3	29 00
1009[illegible]8	John B.	do	11	W. S. Loggie	Chatham	4	35 00
103281	Japan	do	11	Robt. Young & Son	Caraquet	3	29 00
103289	Jersey Lily	do	12	T. Ahier	Shippegan	3	30 00
100981	Kite	do	11	C. Robin, Collas & Co., Ltd	Caraquet	4	35 00
103288	Kite	do	10	T. Ahier	Shippegan	3	28 00
103283	Koh-i-noor	do	13	P. Rive	Caraquet	4	37 00
100980	Lynx	do	11	C. Robin, Collas & Co., Ltd	do	3	29 00
103280	Lilly	do	11	do do	do	3	29 00
100951	Leo	do	13	Hyacinthe Lanteigne	do	4	37 00
103089	Lady Maud	do	11	P. Rive	do	4	35 00
100902	Lord Stanley	do	10	Robt. Young & Son	do	3	28 00
100972	Lizzie D	do	11	do	do	3	29 00
103003	Lark	do	10	T. Ahier	Shippegan	3	28 00
103278	Marie Celia	do	13	Wm. Fruing & Co	Caraquet	3	31 00
92403	Marie	do	25	Ubalde Landry	Grand Anse	3	43 00
103088	Max	do	10	Maxime Cormier	Caraquet	4	34 00
100300	Mikado	do	13	C. Robin, Collas & Co., Ltd	do	3	31 00
100955	Majestic	do	10	C. Hubbard	do	3	28 00
100779	Mermaid	do	11	do	do	3	29 00
100781	Mary Louise	do	11	do	do	3	29 00
103768	Mayflower	do	13	C. Robin, Collas & Co., Ltd	do	3	31 00
103084	Mary Emma	do	11	Onésime Poulin	do	3	29 00
100295	Marie Louise	do	18	Joseph A. Poulin	do	4	42 00
100785	Midnight	do	12	R. Young & Son	do	3	30 00
61447	Merida	do	13	A. D. Aché	Lamèque	4	37 00
72100	Marie	do	11	Onésime Chiasson	do	4	35 00
100292	Marie Joseph	do	12	Lazare Gauvin	Little Lamèque	4	36 00
100991	MacMahon	do	11	P. Rive	Caraquet	3	29 00
100970	Nellie	do	11	Dom. Gallien	do	3	29 00
103284	Normandy	do	11	P. Rive	do	3	29 00

List of Vessels which received Fishing Bounty, &c.—New Brunswick—*Con.*

GLOUCESTER COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103005	Osprey	Chatham	10	T. Ahier	Shippegan	4	34 00
103004	Oriole	do	11	do	do	3	29 00
96740	Providence	do	13	Prospère Albert	Caraquet	3	31 00
72076	Providence	do	12	P. Ahier	Shippegan	3	30 00
96732	Providence	do	11	J. L. Robichaud	Shippegan Isl'd.	4	35 00
100776	Patrick	do	11	P. Rive	Caraquet	3	29 00
100996	Parisian	do	10	do	do	3	28 00
100904	P. T. S.	do	11	Thomas Sivret	do	3	29 00
103080	Ptarmigan	do	11	T. Ahier	Shippegan	3	29 00
103746	Petrel	do	12	do	do	4	36 00
100297	Palma	do	14	Oliver Duguay	Lamèque	4	58 00
103778	Pelican	do	13	Wm. Fruing & Co	Caraquet	4	37 00
103777	Penguin	do	13	do	do	4	37 00
100967	Queen	do	10	R. Young & Son	do	3	28 00
97191	Rita	do	12	C. Robin, Collas & Co., Ltd	do	3	30 00
100979	Ranger	do	10	C. Robin, Collas & Co., Ltd	Caraquet	3	28 00
100908	Rosalie	do	10	E. LeBoutillier	do	3	28 00
100775	Red Gauntlet	do	11	P. Rive	do	3	29 00
100773	Rupert	do	12	do	do	3	30 00
100952	Replevin	do	10	C. Robin, Collas & Co., Ltd	do	4	34 00
103287	Raven	do	11	T. Ahier	Shippegan	4	35 00
103587	Romulus	do	19	W. S. Loggie	Chatham	5	49 00
103078	Reward	do	13	James Degrace	Shippegan	4	37 00
103272	Red Weasel	do	11	J. & R. Young	do	4	35 00
103273	Russell	do	10	Jno. M. Ward	Miscou Island	4	34 00
96727	Ryse	do	11	Sinai Aché	Lamèque	3	29 00
100982	Snowdrop	do	11	C. Robin, Collas & Co., Ltd	Caraquet	3	29 00
100978	Speedy	do	11	do	do	3	29 00
103761	Swing	do	11	Agapit Albert	do	3	29 00
103767	Stella Maris	do	19	Luc Friolet	do	4	43 00
103010	Sarah B.	do	10	Jos. Lanteigne	do	3	28 00
103087	Stanley	do	10	Marcil Caron	do	1	16 00
100963	Stanley	do	10	P. Rive	do	4	34 00
103584	Saxon	do	13	do	do	4	37 00
100907	Sarah	do	10	R. Young & Son	do	3	28 00
100974	Sivret	do	10	do	do	4	34 00
100901	Sea Flower	do	12	do	do	3	30 00
100914	Sea Flower	do	11	C. Robin, Collas & Co., Ltd	do	3	29 00
100788	Sir Charles	do	11	R. Young & Son	do	3	29 00
103762	Swan	do	14	T. Ahier	Shippegan	4	38 09
103006	Swallow	do	11	do	do	4	35 00
96731	Sea Star	do	13	Joseph M. Savoie	Lamèque	4	37 00
92408	Sarah A. W	do	15	R. J. Wilson	Miscou	3	33 00
100959	Sea Bird	do	10	W. S. Loggie	Chatham	3	28 00
103008	St. Joseph	do	12	A. Aché	Lamèque	4	36 00
74401	Sara	do	11	Nazaire Noël	do	3	29 00
103772	Surprise	do	10	Thos. Blanchard	Mizonette	2	22 00
100777	Teutonic	do	11	C. Hubbard	Caraquet	3	29 00
100918	Tickler	do	12	C. Robin, Collas & Co., Ltd	do	3	30 00
103082	Thrush	do	10	T. Ahier	Shippegan	3	28 00
96738	Three Brothers	do	12	J. & R. Young	do	4	36 00
103583	Two Brothers	do	11	Martin Wilson	Little Shippegan	3	29 00
100966	Von Moltke	do	11	P. Rive	Caraquet	3	29 00
100995	Voltaire	do	10	do	do	3	28 00
103285	Valkyrie	do	12	do	do	3	30 00
103588	Vulture	do	13	W. S. Loggie	Chatham	4	37 00
103274	Vesuvius	do	10	Geo. D. Mallet	Shippegan	4	34 00

LIST of Vessels which received Fishing Bounty, &c.—New Brunswick—*Con.*

GLOUCESTER COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
103775	Victoria	do	16	W. S. Loggie	Chatham	4	40 00
100985	Wasp	do	12	C. Robin, Collas & Co., Ltd	Caraquet	4	36 00
100953	White Wings	do	10	R. Young & Son	do	4	34 00
100973	World's Fair	do	11	do	do	3	29 00
103079	Wren	do	11	T. Ahier	Shippegan	3	29 00
88663	William Sinclair	do	17	W. S. Loggie	Chatham	5	47 00
96735	White Fish	do	12	Joseph L. Savoie	Lamèque	4	36 00
100920	Zephyr	do	12	C. Robin, Collas & Co., Ltd	Caraquet	3	30 00

NORTHUMBERLAND COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
92420	Mary Louise	Chatham	13	Donald Loggie	Church Point	3	31 00

ST. JOHN COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
59373	E. M. Oliver	St. Andrew's	14	Charles Harkins	Dipper Harbour.	3	32 00
88253	F. B. Colwell	St. John	19	A. Thompson	do	5	49 00
103114	Edward Morse	St. Andrew's	32	John Butler	Musquash	4	56 00
77783	Lost Heir	St. John	15	Henry Alston	Pisarinco	3	33 00
83426	Louisa	do	16	Bristall Hargrove	Chance Harbour	5	46 00
42089	Lily	St. Andrew's	10	Frank Campbell	Dipper Harbour.	2	22 00
52159	Mary E.	St. John	21	Fredk. Buchanan	Carleton	2	33 00
59322	Sea Flower	do	11	James Thompson	Chance Harbour.	3	29 00
80630	Vanity	Yarmouth, N.S.	11	Patrick Murray	Dipper Harbour.	5	41 00
97149	Winnie	St. Andrew's	12	Robert McLellan	do	2	24 00

LIST of Vessels which received Fishing Bounty, &c.—*Continued.*

PROVINCE OF PRINCE EDWARD ISLAND.

KING'S COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
69132	Bell of the Bay....	Guysboro', N.S..	20	John Gosbee..........	Murray River...	4	44 00
92675	Can't Help It......	Pictou, N.S.....	40	John Herring..........	Murray Har. S..	10	100 00
83196	Ethel Blanche.....	do	17	Wm. Reynolds........	do ..	6	53 00
100691	Frances E. Willard	do	23	Benjamin Herring....	do ..	7	65 00
75481	Julia Ward........	Charlottetown ..	39	Thomas A. Roberts....	do ..	8	87 00
90640	Lorena............	do ..	11	Peter Stuart	Souris East.....	6	47 00
100696	Marion Emerson...	Pictou, N.S.....	30	Reuben Cahoon.	Murray Har. S..	6	66 00
90639	Morell	Charlottetown ..	16	Edward Delorey . .	Georgetown....	3	34 00
69109	Marcella Butler....	Halifax, N.S....	38	John Hemphill.......	do	4	62 00
94667	Nettie M. G.......	do ..	32	John Cahoon.........	Murray Har. S..	4	56 00
74160	Sea Bird..........	Charlottetown ..	20	Joseph White........	do ..	6	56 00
90488	Wave.............	do ..	19	James Delorey........	Georgetown.....	3	37 00

PRINCE COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
71310	Black Watch... .	Charlottetown ..	23	Benjamin Perry......	Alberton......	4	47 00
103771	J. Anny..... ...	Chatham, N.B..	12	John Poirier	Tignish.........	4	36 00
94992	Sarah P. Ayer.....	Charlottetown ..	64	John Champion.	Alberton..... ..	8	112 00
96926	Sea Foam..........	do ..	15	Edward Crossman.....	Grand R. Lot 14	5	45 00
83096	St. Patrick........	Chatham, N.B..	16	John White....	Fortune Cove...	5	46 00

QUEEN'S COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
92466	G. H. Gardiner....	Charlottetown ..	17	Eben Marshall, jr....	Rustico.........	5	47 00
96936	Katie and Ella ...	do ..	20	Jacob V. Buskirk.....	North Rustico..	5	50 00
103592	Rosamond.........	do ..	18	Frank A Churchill. ..	do ..	6	54 00

LIST of Vessels which received Fishing Bounty, &c.—*Concluded.*

PROVINCE OF QUEBEC.

BONAVENTURE COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew paid.	Amount of Bounty paid.
							$ cts.
94549	Winnie G. S.	Lunenburg, N.S.	26	Daniel McGregor	Dalhousie, N.B.	5	56 00

GASPÉ COUNTY.

94675	Success	Halifax, N.S.	16	R. J. Leslie	Amherst, M. I.	5	46 00

SAGUENAY COUNTY.

74270	Amarilda	Quebec	24	Cléophas Vézina	St. Michel.	3	42 00
85756	Aristile	do	19	Philéas Vézina	do	2	31 00
100857	Alix	do	13	Alfred Tremblay	Montmagny	2	25 00
100463	B. C.	do	15	François Métiver	do	2	27 00
83370	C. M. G. P.	do	46	Joseph Cormier	Pt. Esquimaux	6	82 00
61966	D. Cronan	Halifax, N.S.	40	Henry Turbis	do	4	64 00
80754	Eugénie	Quebec	48	André Vigneau	do	7	90 00
88469	George Clarke, jr.	Ariehat, N.S.	64	Luc Cormier	do	10	124 00
66259	Katie E. Stuart	Halifax, N.S.	54	James Buckle	Bonne Esperance	5	84 00
69380	Marie Anne	Gaspé	36	Charles Landry	Pt. Esquimaux	5	66 00
100464	Marie Oliva	Quebec	12	Horace Demeule	Ile aux Coudres.	3	30 00
69382	MarieduSacréCœur	Gaspé	46	Paul Landry	Pt. Esquimaux	6	82 00
100365	Marie Louise	Quebec	13	Francis Germain	Natashquan	3	31 00
66060	P. Fortin	do	79	Francis Jomphe	Pt. Esquimaux	7	121 00
103358	Romeo	do	22	Louis Pineault	Bic	2	34 00
92334	Ste. Marie	do	53	Pierre Ouellette	Québec	6	89 00
69591	Ste. Marie	do	37	Alex. Scherrer	Pt. Esquimaux	6	73 00
80753	Stella Maris	do	51	Louis Cummings	do	9	105 00
75680	Sea Star	do	52	Dominique Cormier	do	8	100 00
83360	Ste. Anne	do	13	Peter Fraser	N. D. Ile Verte.	2	25 00
64873	Willie	do	36	Louis Gagnon	Pentecost	5	66 00
66727	Willow	do	18	Auguste Boulet	Montmagny	3	36 00

APPENDIX No. 3.

NOVA SCOTIA.

District No. 1.—Comprising the four counties of the Island of Cape Breton.
Inspector A. C. Bertram, North Sydney, C.B.

District No. 2.—Comprising the counties of Cumberland, Colchester, Pictou Antigonish, Guysborough, Halifax and Hants.
Inspector Robert Hockin, Pictou.

District No. 3.—Comprising the counties of King's, Annapolis, Digby, Yarmouth, Shelburne, Queen's and Lunenburg.
Inspector L. S. Ford, Milton.

DISTRICT No. 1.

ANNUAL REPORT ON THE FISHERIES OF CAPE BRETON ISLAND, COMPRISING THE COUNTIES OF CAPE BRETON, INVERNESS, RICHMOND AND VICTORIA.

NORTH SYDNEY, C.B., 2nd January, 1897.

Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit herewith my thirteenth annual report of the fisheries of Cape Breton Island, embracing the counties of Cape Breton, Inverness, Richmond and Victoria.

It will be observed from the statistics and the tabulated statements accompanying this report, that the aggregate value of the fish caught on the coast and inland waters of this island for the year 1897 is $1,056,115.83; an increase in value over 1896 of $12,568.36. The total increase in value is due to the advanced price obtained for the lobster product this year over that of the previous one. Although there was a falling off in the total pack of lobsters, yet the market value of the catch as compared with 1896, shows an increase of $77,940.28.

The chief decreases in the leading branches compared with the previous year are as follows:—

Salmon, fresh	49,996 lbs.
Salmon, preserved	1,696 lbs.
Salmon, salt	124 brls.
Lobsters	32,242 cans.
Lobsters, alive	145 tons.
Cod, dried	6,027 cwt.
Trout	16,215 lbs.
Smelts	71,447 lbs.
Oysters	454 brls.
Squid	3,079 brls.

Chief increases :—

Haddock	670 cwt.
Pollock	1,741 cwt.
Halibut	56,418 lbs.

The salmon fishery, although not as good as that of the previous years, shows a good average, the returns of salmon, fresh, pickled and preserved, being greater than that of 1895. There is no doubt that the stocking of the rivers from the Sydney hatchery counteracts the great drain through fishing.

Pickled herring shows a decrease of 1,563 brls., but there is a large increase in the quantity of fresh or frozen herring recorded in the returns this year. The greater portion of this increase in the yield of fresh herring occurs in the district of West Bay in the Bras d'Or Lake. These fish were used chiefly for bait by Nova Scotia bank fishermen.

The chief cause for the falling off in the other branches of the fisheries must be attributed to a less vigorous prosecution of the industry than in previous years. The statistics show that the number of people engaged in 1897 was 512 less than in 1896. By the following table it will be seen that while there is a decrease in the number of people engaged in the industry in each of the four counties of the island, the greatest decrease has occurred in Inverness county.

Counties.	Men.		Decrease.
	1896.	1897.	
Cape Breton	1,395	1,316	79
Inverness	2,133	1,813	320
Richmond	2,636	2,635	1
Victoria	1,415	1,365	50

The cod fishery in previous years has been more vigorously prosecuted in Inverness county than any other branch of the fishing industry. The low price obtained for dried codfish discouraged the fishermen from pursuing this fishery. Many engaged in farming and others sought employment elsewhere, rather than continue the cod fishery under the prevailing circumstances.

The following comparative table will show the total yield of the fisheries by counties for the years 1896 and 1897 :—

County.	1896.	1897.	Increase.	Decrease.
	$ cts.	$ cts.	$ cts.	$ cts.
Cape Breton	197,214 63	209,759 72	12,545 09	
Inverness	301,966 70	280,427 50	....	21,539 20
Richmond	343,721 75	405,850 60	62,128 85	
Victoria	200,664 39	160,078 01	....	40,586 38

The result of the total yield for each county may be here referred to.

CAPE BRETON COUNTY.

The only branches of the industry which exhibit any increase are lobsters, herring and halibut; while cod, haddock, mackerel and salmon show a marked decrease. As already stated the increase in the total value of the yield in the said county may be attributed to high market value of the lobster product. In 1896 there were 14 canneries operated in Cape Breton county, with a total pack of 9,335 cases, valued at $62,730. In 1897 the number of canneries increased by two; there being 16 in operation, with a total pack of 10,260 cases, valued at $98,490. The high price obtained at the different canneries stimulated the industry, and before the close of the season the grounds showed evidence of scarcity of fish.

INVERNESS COUNTY.

It will be observed from the foregoing tabulated statement, that this county exhibits the largest falling off in the number of men employed, as compared with the previous years. As I have already stated the decrease is confined to the cod fishery and the reason for it is to be found in the low market value of cured cod, causing many of the fishermen to seek other employment, principally farming. The only branch of the fishery which appears to have been prosecuted with any degree of vigour is the lobster fishery. There were 20 canneries in operation during the season in Inverness county, being an increase of four over the previous season. The total pack of these 20 canneries was 6,226 cases; an increase of 1,230 cases over the product of the 16 canneries operated in 1896, the increase in the market value of the season's product in this county being $26,200. Were it not for the success of this branch of the fishery and its high market value, the total decrease in the value of the fisheries in Inverness county would have been considerable.

RICHMOND COUNTY.

This is the only county of Cape Breton Island in which the yield of the chief branches of deep sea fishing exceeded that of the previous year. But it is in this county that the most noticeable falling off occurred in the lobster fishery. The number of persons employed in the fisheries of Richmond county during 1897 was practically the same as in 1896. The number of canneries operated in 1897 was 15, while there were 17 in 1896. The total pack shows a decrease equal to 2,260 cases.

VICTORIA COUNTY.

The decrease in the total value of the fisheries in this county amounts to $40,586.38. This is a very large falling off in the value of the fisheries in one season, and as a large percentage of the people in the northern part of the county, from Big Bras d'Or to the county line at Meat Cove, depend solely on the fishing industry for a livelihood, the failure of their operations this year is felt most severely, and I learn that in some of the districts on the stretch of coast above named, the people are in destitute circumstances and will require Government aid during the winter. The marked failure of the fisheries in this county is not confined to certain branches, but the greatest decreases are noticeable in cod, halibut, herring and lobsters. Notwithstanding the fact that there were 20 lobster canneries in operation in this county, the total pack is 572 cases less than that of the previous year, when only 17 canneries were operated.

GENERAL REMARKS.

Throughout the season, and more particularly towards autumn, the prosecution of the fishing industry was much hindered by frequent and severe storms. Shore fishermen who fish in boats are very timid about being out in rough weather, and on our exposed coast line a very ordinary breeze from seaward will compel them to stay ashore. Blustry weather is, therefore, the greatest hindrance to the prosecution of the fishing industry. The scarcity of bait for hand line fishing is the second greatest drawback our fishermen have to contend with, and causes great annual losses to the fishery. It is to be regretted that our fishermen, as a rule, do not avail themselves of that invaluable adjunct to their business, an ice-house, which, in this country, can be inexpensively constructed and easily filled at a season when they are otherwise idle. With a small but well filled ice-house, every fisherman could lay up bait which almost invariably appears during some part of the season, and always in advance of the larger fish. Every fisherman could thus provide against frequent losses resulting from want of bait. Some means that would be instrumental in directing their efforts to this end, would prove of incalculable value. An important point in reference to the bait supply, to which I beg to invite your attention, is the duty heretofore levied on imported clams. Fishing vessels which go out to the near banks to fish can obtain this imported bait, out of bond and duty free, whether the parties be aliens or residents, whilst boat fishermen who necessarily prosecute their calling in the bays and within short distances of headlands, have to pay a customs duty of $2.00 per barrel. Boat fishermen regard this as discrimination against them. This is a point of interest to our resident shore fishermen which it would be most desirable to rectify.

MACKEREL.—PURSE-SEINES.

The autumn mackerel fishery was practically a failure and this is to be particularly regretted as the price of mackerel was exceptionally good, and a good fishery would have materially helped the fishermen out in a poor season. Natural causes no doubt contributed to this unfortunate condition, but the overwhelming cause is found in the purse-seine employed by United States fishermen, and particularly during the spring fishery while mackerel are on their way to the spawning grounds. How can it be otherwise when the mother fish are caught by thousands of barrels in purse-seines and the fish are so full of spawn that it runs from them on the deck of the vessels? The scarcity of mackerel year by year can be attributed more to purse-seine fishing in the spawning season than to anything else. If an international agreement between Canada and the United States could be concluded whereby purse-seining vessels would be prevented from fishing before the middle of June, these fish would again be found as plentiful as in former years.

Mackerel this season made their appearance on the western coast of Newfoundland and for the first time in very many years were taken in gill-nets. Whether they were diverted from their usual course by purse seiners or not I cannot say, but there is no doubt of their unusual appearance this year in Newfoundland waters. There is a legend in the colony which I might here relate. It was told me by no less a personage than His Grace Bishop Howley: Many years ago mackerel frequented the western shore of the ancient colony in such immense numbers that the fishermen would find their herring gill-nets filled with mackerel instead of herring, so that they came to regard them as a nuisance. These fish at that time were of very little commercial value and large quantities were taken ashore by the fishermen and those of them who possessed patches of ground would use these fish for compost to fertilize their small farms. After a few years, says the legend, mackerel disappeared from the waters of Newfoundland and their permanent disappearance came to be regarded as an unfriendly act of Providence on the people for their lack of appreciation of the gift of these excellent food-fish. Whether mackerel frequented the waters of the colony as reported there is no data to establish but their presence there last year may be accidental. Possibly Providence again interposes and as a punishment to our country for allowing their destruction by purse seines during spawning season, these fish are to gradually disappear from our waters.

COD.

This, is the leading branch of our great fishing industry. The decrease this year is considerably accounted for by the low price prevailing for the cured article. While other branches have their seasons the cod fishery is carried on from early spring until the end of the year. Indeed on the Atlantic coast these fish are found more abundant in autumn than at any other time of the year. The market depression is keenly felt by all fishermen and has been the case particularly during the present year. There is no commercial problem in the industries of this island, at the present moment, so pressing of a solution as that of sufficient markets for the products of this fishery. Were this difficulty satisfactorily solved, in such a manner as would secure markets that would absorb the production at fair average prices, the cod fishing industry would, in a very few years, increase its productions threefold. At present, Cape Breton fishermen have no control in even the limited consumption of the home, Canadian market. In the east the home market is glutted with St. Pierre and Newfoundland fish, whilst the west is supplied by fish imported from United States traders. The fisherman, as the markets now are, has to sell his fish to local traders at whatever price is offered him, and has to take his pay in goods at such rates as the trader chooses to demand, and, as in this year, is even refused this barter on any terms. Except in the case of a few wealthy corporations or foreign capitalists who can afford to retain stocks for an indefinite period, the traders in fish are themselves exposed to all the inconvenience, risk and loss arising from the absence of ready markets. Traders possessed of but moderate capital, who require to realize promptly on returns, are thus too heavily weighted for the exercise of enterprise.

LOBSTERS.

The prevailing high prices paid for lobsters causes this fishery to be vigorously prosecuted and year by year the canning establishments are on the increase. The owners of the new canneries are from the western part of this province, which would indicate that the western grounds are either over-fished or are already well covered by canneries. This fishery is in need of restriction in Cape Breton, to preserve it.

OTHER BRANCHES.

With regard to the other branches of the fisheries, all of which show a decrease over the previous year excepting halibut, pollock and haddock, beyond natural causes it is difficult to assign a reason for these decreases. Prevailing storms when the migratory fish are striking in shore very often prevents fishermen for days from visiting their nets, and again, such fish as herring are sensitive to storms and strike for deep water, thus causing a decrease in the catch for the season.

The regulations governing the various branches of the fisheries were well observed, there being no fishing in close season.

I have the honour to be, sir,
Your most obedient servant,
A. C. BERTRAM,
Inspector of Fisheries.

[MEMO.]

I have not compiled a synopsis from the fishery overseers' reports this year for the reason that upon examination I find there is nothing contained in them not given in my report and statistics. A large number of the present overseers have only been in office a few months and are not very well acquainted with the fisheries.

A. C. B.

DISTRICT No. 2.

ANNUAL REPORT OF THE FISHERIES OF DISTRICT No. 2, OF NOVA SCOTIA, COMPRISING THE COUNTIES OF ANTIGONISH, COLCHESTER, CUMBERLAND, GUYSBORO, HALIFAX, HANTS AND PICTOU.

PICTOU, 2nd January, 1898.

Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries.

SIR,—I have the honour to submit my annual report of the fisheries in District No. 2, Province of Nova Scotia, together with tabulated returns showing the quantities and values of each kind of fish caught, as well as comparative tables showing the increase and decrease of each kind of fish.

The estimated value of the catch for the past season is $1,464,976, which, compared with the value of the catch for 1896, $1,429,782, shows an increase of $35,194, about 2½ per cent. This increase, however, is not attributable to the greater quantity of fish caught, but to the enhanced value of some of the more important kinds of fish, particularly the lobster, the value of the yield being estimated as $191,218, greater than that of last year. Had the prices obtained been the same as those of the previous year the values would have shown a decrease of ten per cent.

Of the anadromous fishes the catch of salmon is about equal to that of last year.

Shad, an increase of	27	per cent
Smelts, a decrease of	15	"
Alewives, a decrease of	40	"
Of the deep-sea fish, the catch of		
Halibut shows a decrease of	27	"
Cod shows a decrease of	9	"
Hake shows an increase	23	"
Pollock shows an increase	4	"
Haddock shows a decrease	9	"

The catch of all the fish of the cod family is 75,863 cwt. in 1896, and 71,293 cwt. in 1897.

SALMON.

On the Atlantic coast the counties show an increase of twenty-three per cent, and those counties on the Straits of Northumberland an increase of seven and one-half per cent, while the Bay of Fundy counties return a catch ten per cent less than last year. Over the whole district the catch is nearly equal to an average of the past nine years. During the spawning months, viz., October and November, of the past season the rainfall was much below the average, and the period during which the parent fish could ascend the smaller rivers was limited to between two and three weeks.

From the counties upon the Bay of Fundy, the returns show that the catch of shad is about twenty per cent above that of last year, the following being the reported catch since 1889:—

	Barrels.
1889	535
1890	750
1891	1,178

1892	1,811
1893	746
1894	981
1895	1,185
1896	1,079
1897	1,382

The quantity taken in the Shubenacadie River and its tributary the Stewiacke was 133 barrels. These are mostly taken when the fish ascend these streams during the spawning time, May and June, the only close season being from Friday evening until Monday morning of each week. The Bay fishermen complain of the large destruction of the fish at this time and claim that if no fishing was allowed in these rivers the fishery would shortly be restored to its former importance, when the catch was from four to five times as large as it is at present and the yield was worth to the fishermen in this district in those counties on the Bay of Fundy about seventy thousand dollars instead of ten thousand, which is the estimated value of the catch of the past season. I do not think it is practicable, with the very limited vote for the protection of the fisheries, to entirely prohibit fishing in the river, for it would be a regulation which would meet with no sympathy from the residents along the banks of the river, and its enforcement would depend entirely upon the guardians; but if the weekly close season during May and June, was increased to four days of the week, the riparian owners would derive a benefit from the restriction in the prospective increase of the fish, and there would be less difficulty in enforcing the law.

SMELTS.

There is a considerable decrease in the yield of these fish in the district, equal to about 16 per cent. During the season of bag-net fishing fewer licenses were issued, which is evidence that the business has not been paying.

The most notable decrease in the anadromous fish is that of the *Alewife* which is about 42 per cent from that of last year, it is also 40 per cent below an average catch of the past nine years.

The fluctuations in the quantities caught are probably owing to the favourable or unfavourable condition of the rivers during the spawning season; if the rivers are full during May and June and the fish have access to the lakes, the conditions are favourable and when the fry reach the adult stage and return to the rivers there, is a good catch, but when the rivers are low the contrary is the case.

HERRING.

The catch shows an increase over that of last year of about 30 per cent, but it was only an average of the past nine years. In the Straits of Northumberland the largest catches are made shortly after the ice leaves: the fish are then poor and very few are salted excepting for lobster bait. On the Atlantic coast there are more taken in the autumn months.

MACKEREL.

The catch has been a small one-about 40 per cent less than last year.

The past season contributes to strengthen the supposition that when the autumn months are dry the catch of mackerel is a light one, but if the rivers are full, conveying to the ocean the young of anadromous fish as well as food in various forms fed upon by lower forms of fish-life and among which the mackerel find their food, this brings them on the coast. There were no important catches of mackerel last autumn until the rains set in. If this supposition be correct it goes to show the very great importance of keeping the spawning grounds of anadromous fish accessible, for when rivers become obstructed by dams not only is there direct injury to the salmon trout, shad and gaspereaux fisheries, but there is also serious injury to the coast fisheries, hence the importance of fishways in every dam upon all the fish rivers, more particularly those which flow into the ocean.

FISHWAYS.

The proper construction of fishways requires considerable experience and careful observation. In the past very serious injury to dams have been caused by their location, hence the importance of some knowledge of the structure of dams and the displacement caused by the erection of some kinds of fishways.

After having considered the fishway question for a number of years, I am of opinion that the form which will suit the fishery interests and the interest of the millowner best is one which may be constructed below the dam; by using such a fishway the dam cannot be injured, for the injury invariably comes from the upper part of the stream, ice jams and debris brought down by floods.

One difficulty with such fishways has been that they have been made to discharge into the river some distance below the dam, and fish do not find the entrance, but if they are built with an elbow running down stream part of the distance to the elbow thence at right angles to the first direction, then turning upwards toward the dam, and discharging near the dam, the fish will be able to find it and follow the stream until they are finally above the obstruction.

One important feature is that no more water than is absolutely requisite should be used, a fishway that requires too much water will find an enemy in the millowner, and it will be very apt to be closed unless the fishery officer lives in the vicinity and attends to his duty. No arbitrary rule, however, can be laid down for the construction of fishways, in some cases a natural pass can be obtained round the dam, which answers all the purposes of a fishway, and in many instances in this district this has been done, but when such a pass cannot be obtained the locality and the structure of such dam requires to be considered by an experienced person. There are still some problems which have to be solved regarding the location of fishways for some of the kinds of fish, notably gaspereaux. In some rivers these fish take a fishway readily; in others, the location being similar, they have never been seen in one.

For instance, at Ship Harbour River gaspereaux may be seen any season going through the fishway, but at Hubbard River with a similar gradient and location as good there have been no evidence of these fish going up. Important as it is that fishways should be constructed, yet from the fact that very few people appreciate their importance, and that the construction is obnoxious to the owner of the dam who will not pay the cost of construction (from $150 to $300) unless he cannot help it, and who probably decries the structure when it is built, the difficulties which are placed in the way of the department and its officers when it is considered in the public interest necessary to enforce the building of fishways can only be appreciated by those who have experienced them and yet the millowner has no more right to obstruct a stream and prevent fish having access to their spawning places than he has to obstruct a highway.

LOBSTERS.

During the fishing months of the past season, April, May and June the weather was very unsuitable for fishing, especially upon the Atlantic coast; for when there is a storm there, it is two or three days afterwards before the fishermen can haul their traps. That is not the case on the straits, and as a matter of fact the catch in the straits and in Chedabucto Bay was slightly in excess of last year, while on the Atlantic coast it was short, but over the whole district the catch is about equal to that of the previous year. A much larger business was done in exporting live lobsters.

Owing to the scarcity of other fish and the excellent prices obtained for canned lobsters, there were a larger number of fishermen engaged in illegal fishing than has been the case for a number of years—there was not, however, a single factory open—any packing that was done was upon islands along the coast of the counties of Guysboro' and Halifax where to a certain extent they are out of reach of the local officers, for they cannot hire fishermen to assist in enforcing the law against their neighbour.

To enforce the season law in this locality requires more than ordinary means, for there are about seventy miles of coast which is particularly favourable for the operations of the poacher.

* * * * * * *

SPECIAL GUARDIANS.

There are about 1,000 miles of river in this district which may be regarded as the nursery of the salmon, alewife and shad fisheries, which yield annually about as follows :—

Salmon	$ 40,000
Alewives	20,000
Shad	14,000
Trout	40,000
	$114,000

This is a public preserve, and its preservation will depend upon the activity of the fishery officers. No individual has sufficient interest to instigate him to proceed against offenders of the law, so that unless there be official protection this valuable property is left to the tender mercy of the poacher. It is useless to argue with the resident of these rivers, especially those which flow into the Straits of Northumberland, for these are so small as a rule that fish do not go up except in close seasons. Point out, you may, that the product of every pair of salmon (assuming that one in 100 comes to maturity) is worth $100 to the country, your deductions may be good, but he wants the salmon.

The preservation of the salmon fishing may be affected by giving fish access to spawning grounds and protecting them in the rivers, and if this annual yield of $40,000 could not only be preserved but very largely increased by a judicious outlay, it ought to be done.

An alternative method would be to capture the fish at the mouths of the rivers, retain them until they deposit the spawn, which may be developed in the hatcheries. Under this method the parent fish is not so liable to be destroyed by poachers, and the spawn is safe from the eels and the crushing of ice floes.

In the hatcheries 90 per cent of the spawn are developed into the fry, which are retained during the very early stages of its existence and placed in the water with better chances for life. Any outlay in this direction ought to give ample return to the public. With a little extra expenditure the output of the present hatcheries should be trebled. It would do much to popularize this method, if the spawn taken from a river was restored to it in the fry stage. The guardians that are employed are only paid for patrol service actually performed between sunset and sunrise, and their presence on the river is usually sufficient to prevent poaching. In my opinion the cheapest and most effective means for the protection of river fisheries is to employ guardians for every three or four miles of river that require to be patrolled.

Salmon are in many of the rivers for from thirty to forty days during spawning season, and it is during this period that the services of a guardian are necessary. The following nets were seized by the guardians during the past season, being set in violation of law :—

Two on River Philip, Cumberland, by guardians Thomson and King.
One on Waugh's River, Colchester, by guardian Hayman.
One on West River, Pictou, by guardian Meagher.
One on Middle River, Pictou, by guardian Porter.
One on East River, Pictou, by guardians Livingstone and Smith.
Three on French River, Pictou, by guardian Stewart.
Five on Shubenacadie River, Hants, by guardian Horne.

The following is a synopsis of reports of overseers :—

Overseer A. R. McAdam, of Antigonish, reports that the quantity of lobsters caught in that county was equal to the catch of the previous year, but this was owing to a larger number of traps used and of persons engaged in the fishery. The catch of salmon was about one-third less than last year. Seventy-five per cent of all the salmon taken are shipped fresh in ice to the United States. There are no fishways in his division, the only one which he found on assuming office was useless, being out of repair. The guardians are for the most part faithful to their trust and many of them take much interest in their work.

Overseer Davison, of Colchester, remarks an increase in the shad caught in the Bay of Fundy. The past season was a very favourable one, so far as the weather is concerned, which was very fine during the whole fishing season, and it is probably owing to this that more fish were taken. The only abuse he knew of is the undue slaughter of shad season, for the legal close season only extends from Friday evening during the spawning morning in each week, upon the other days the mother shad, full of spawn, until Monday may be legally taken, and they are caught in numbers and a vast quantity of spawn life destroyed. He again argues that there be a close season during the time the fish are in the rivers for spawning purposes, viz., May and June. Only one violation of law came to his notice, and he had the person summoned before the Inspector and fined.

Most of the lumber cut in his division is by means of portable mills away from the rivers, and he is not aware of any mill refuse being dumped into any of the rivers.

Overseer G. O. Smith, of Cumberland, remarks a great falling off in the catch of gaspereaux. This is attributed to a number of local causes, but as a matter of fact, the proportion of the catch in his division was as large as in any other part of the district. Two nets were found set in violation of the law and seized.

Overseer Joseph Davis, of Guysboro, remarks a falling off in the catch of salmon. This fishery was prosecuted as vigorously as in former years, so that this falling off is due to scarcity of the fish. The catch of mackerel was extremely small, being sixty-eight per cent less than last year. Cod, haddock, hake and pollock, all show a slight increase over last year, and herring were more plentiful, the catch being 130 per cent over last year. There has been an increase in the shipment of live lobsters from his division, and extensive preparations are made for their exportation next season. The past season's work was not as profitable to the fishermen as the previous one, owing to the scarcity of mackerel and the low prices for other kinds of fish.

There was a great scarcity of bait in the autumn months in Chedabucto Bay, so that the cod and haddock fisheries were not prosecuted to any great extent.

Private parties are about erecting refrigerators, which will insure a sufficient quantity of bait in future.

Overseer George Rawlings, of Halifax, says that the cod fishery was not as good as last year along the Atlantic coast of Halifax, but the vessels from his division brought full loads home, so that there is about equal to two-thirds of the quantity caught last year taken. Lobsters were as plentiful, but owing to the rough weather and heavy seas there was not as many caught, and much of the lobster gear was destroyed. There was a good catch of herring in October. All the fish that frequent the rivers, such as salmon, alewives and trout, were very scarce. Smelts were not nearly as plentiful as last year, and mackerel about a total failure. Two new dams have been built across streams that heretofore have been unobstructed. They are good salmon-trout and alewife streams, and unless fishways are built in the dams these fish will leave the rivers. Owing to the leakage in the dam on Tangier River, the fishway which was built to suit the dam when full, is unsupplied with water and is useless.

The fishery laws were well observed until the fishermen began to pack lobsters in out of the way places. He spent some considerable time trying to suppress this illegal fishing, seven persons were convicted. Several cases of lobsters seized, also one boat, two pots and some minor articles confiscated.

Overseer Pritchard, of Pictou, says that the oyster beds at the mouth of the East River, are all but exhausted. There were ten boats licensed in 1896, but only two fished in 1897. No smelt fishing licenses have been issued, and the catch with hook and line was small. There was considerable illegal fishing for salmon during spawning season; four nets were seized, being set in violation of law, and one man was fined for fishing salmon.

Overseer A. J. McDonald says that although the catch of salmon was less than last year it is owing to the unfavourable weather for fishing. Some of the fishermen had their nets so badly damaged, they were unable to fish during the latter part of the season. The guardian on French River captured three nets which were set for salmon in close season. The salmon fishermen complain that the lobster traps, with their bait, which is generally putrid, drive off the salmon and interfere with their catch. A petition, numerously signed, will be forwarded asking that lobster traps be not set within a mile from the shore. Spring herring were more plentiful than for some years.

DISTRICT No. 3.

ANNUAL REPORT ON THE FISHERIES OF DISTRICT No. 3 OF NOVA SCOTIA, COMPRISING THE COUNTIES OF KING'S, ANNAPOLIS, DIGBY, YARMOUTH, SHELBURNE, QUEEN'S AND LUNENBURG, FOR THE YEAR 1897, BY INSPECTOR L. S. FORD.

MILTON, N.S., 2nd January, 1898.

Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries.

SIR,—I have the honour to submit herewith my annual report of the fisheries of District No. 3, Nova Scotia, for 1897, with tabulated returns, showing quantities and value of each kind of fish caught.

The value of the catch in this district for 1897 is as follows:—

Total catch for 1897	$5,569,256.95
do 1896	3,781,884.71
An increase of	$1,787,372.14

This increase, in my opinion, has been to some extent affected by the greater care taken to secure reliable statistics. There has always been an idea prevalent in some localities, that some system of taxation is intended, which the greater value of the catch may determine. As year by year this suspicion is lessened, the officers have less trouble in securing accurate figures of the catch of fish and their values, consequently the returns show better.

As usual the cod family, including haddock, pollock and hake, is to the front with a value of nearly $3,000,000, followed by the lobster with $1,300,000.

The bank fishermen as a rule did fairly well, but the shore fisheries for cod, &c., were, in some localities, almost a failure. Many reasons are extant, accounting for this, but it is doubtful whether any remedy can be supplied by legislation. I might be excused for mentioning theories of my own and other officers, gathered from observation for a number of years. There is no doubt, scarcity of bait is a factor, but why should the usual bait be scarce. For some unexplained reason, the fish do not approach our shores as in former years. The large numbers of dog-fish around the coast may to some extent, account for the absence of other fish, and it is suggested by some of our business men, that a sufficient bounty in the shape of a bonus to a factory, be offered by the Government, that would enable it to buy and convert into plant food or oil all the dog-fish that might be secured; as it is well known they are rich in such material, thus creating a market where a nuisance now exists, and in a few years draining them out of our waters.

LOBSTERS.

Lobsters, which come next in importance to the codfish, are, despite the increased catch, yearly becoming scarcer. It takes more men, more traps, and more sea area, to produce the same quantity of fish.

In this district the law has been fairly well observed, especially in some counties; but it requires constant and effective supervision to preserve the law inviolate. A disposition to save all their catch, regardless of the size, seems to pervade too many of our fishermen, and the extent of coast makes it comparatively easy to ship on board American smacks anything and everything they will purchase.

I had the honour to suggest, in a former report, "that no lobster smack be allowed to clear from any of our ports, unless they presented a certificate of a clear cargo from some fishery officer." This, or some other plan, is, in my opinion, necessary for the same end, as it is almost impossible with the means at our command to prevent them carrying on this illegal business.

MACKEREL.

The comparative failure of this most important fishery, is open to legislation. A number of our bays and harbours, where this valuable fish once swarmed in myriads, are now deserted. One reason for this is not far to seek. The spring mackerel are full of spawn; they are on their way to deposit it, when caught in the traps on the south-west coast. Any person opening one of these fish at the time can see the prospective waste. Most other fish are protected in breeding season, why not one so valuable as mackerel.

INLAND FISHERIES.

Our river fisheries are now fairly well looked after, and the fish are increasing in consequence. There is constant collision between the mill-owners on the streams and the officers. We think we can justly claim that the fish have a preferable right on the waters of any rivers, and that unless there is sufficient water to pass the fish beyond the dams, and to run the mill as well, it cannot be a good mill site. Many of the mill-owners claim a prior right to the water. Some considerable change is needed in the regulations in force on many of our rivers, if we may hope to preserve our valuable fisheries intact for any number of years to come.

SYNOPSES OF OVERSEERS' REPORTS.

R. F. Reid, Overseer, Wolfville, King's County, says he is unable to report as large a catch of fish on the Gasperaux River, as in previous reports. Prices were so low fishermen did not try to catch them. Large numbers ascended to the spawning grounds, and young fish in myriads came down in the autumn. Shad is an average catch. Salmon less than an average. Fishermen have complied very well with the law.

Wm. McIntyre, Overseer, Aylsford, King's Co., says: "Salmon and trout are an average catch; young salmon are very plentiful at the head waters, having been put in for a number of years from the Bedford fish hatchery."

Jas. S. Miller, Overseer, Canning, King's Co. reports the catch of salmon as below the average. The shad fisheries at Scott's Bay and Starr's Flats show well, 760 bls., other places only fair. Cod, haddock and pollock, fair to good. Herring was poor all along the shore: this is attributed to the lobster traps, by most of the fishermen. The fishermen are law abiding, no serious complaints came to my notice.

John A. Webber, Overseer, Chester, Lunenburg County, reports a decrease in several kinds of fish. The cause is simply a scarcity of fish, as the prosecution of the fisheries was not less vigorous than in former years. The several close seasons have been strictly observed. The fishways in this district are kept in good condition, and insure the passage of fish. In his judgment there has been no injury done to the fisheries of this division by the mill refuse thrown in the water.

George B. Bishop, Overseer, Digby, writes: The fishermen in this district report a good year's work, above the average. Hake fishing has been prosperous; an advance in the price of sounds is of great advantage. Just now everything works favourably for a good lobster trade during the winter season. This fishery is still to the front in importance and contributes largely to the income of our fishermen. He thinks it advisable to prohibit the catch of small lobsters. The 10½ inch law would be satisfactory to this county, unless this is done our lobster business must decline, and may become a thing of the past. Shad show a large catch this year, mackerel almost nothing, while herring have been quite plentiful. This overseer says: "I have used the utmost diligence in the collection of facts and data embodied in my yearly report, which I trust will meet your approval. This perhaps explains the large increase in the yield of this county.

Overseer Hatfield, Yarmouth Co., writes: Codfish shore fishing, above the average; bank fishing, below, caused by scarcity of bait, owing to the action of the Newfoundland government. Herring, an average catch with slight decrease in price. Live lobsters a decreased yield but increased prices; canned lobsters, a very fair increase in quantity and price. Mackerel, away below the average and almost a failure. Alewives and salmon, a fair catch at reduced prices. Speaking generally, most all the branches of this industry show a decrease.

E. S. Goudey, Overseer at Shelburne, states that the catch of cod fell off 4,000 cwt., owing to scarcity of fish. Herring show an increase of 3730 brls. Live lobsters are fully up to last year's export, and canned show an increase of 43,290 cans. Mackerel show a decrease of 241,000 lbs. Plenty of mackerel were seen off shore, but they did not come near the traps. Taking one kind of fishing with the other, the fishermen have done a fair year's work. The close season was fairly well observed.

W. M. Solomon, Overseer, Lunenburg Co., says: Herring and mackerel have, in my district, been a total failure. The catch of cod, haddock and pollock, on the shores, is also below the average. It is impossible to form a correct opinion as to why said fish do not frequent our shores as in former years. It is possible the over abundance of dogfish may be the cause; some attribute it to the lobster traps. Our Grand Bankers, Labrador and North Bay men have made an average trip, and on the whole, there is possibly as many fish landed as last year. The lobster catch is considerably less than last year. The cause is, that it is being overdone." He thinks that if winter fishing is allowed to continue, the lobsters will be extinct in a few years. Salmon and alewives were not as plentiful as last year, that is, not so many were caught. Rivers in this district are in good condition, with a few exceptions.

In conclusion, I wish to call attention to the success of the finnan haddie industry, especially in Digby Co., large quantities are put up, and find a ready market in the upper provinces, even away to the Pacific coast.

A new industry is also starting at Lockeport, Shelburne Co. Canning fried codfish, a product which bids fair to take a first place as a preserved food. An expensive plant has been put in under the supervision of Freeman Payzant, Esq., an experienced packer, and a successful trial made of the business to date.

I have the honour to be, sir,

Your obedient servant,

L. S. FORD,
Inspector of District No. 3.

NOVA SCOTIA—District No. 1.

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of all Fishing Materials, Number of Fishermen and Quantities of Fish and Fish Products in the Island of Cape Breton, Province of Nova Scotia, for the Year 1897.

Number.	Districts.	Fishing Vessels and Boats.							Fishing Gear or Materials.								Kinds of Fish.							Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trawls.									
		No.	Tonnage.	Value.	Men.	No.	Value.	Men.	No.	Fathoms.	Value.	No.	Fathoms.	Value.	No.	Value.	Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	
	Cape Breton County.			$			$				$			$		$								
1	From Sydney to Glace Bay	...	...	...	...	29	1165	64	123	2460	755	...	...	...	32	242	150	...	141	820	...	150	5	1
2	From Lingan to South Bar and Sydney	1	21	800	4	65	1284	76	191	3850	1090	...	...	...	107	285	1740	...	377	1000	...	...	1	2
3	From Sydney to North-west Arm and Sydney Forks	...	...	...	...	32	280	48	64	1280	350	...	...	...	1	4	...	...	50	2000	12000	...	...	3
4	North Sydney to Ball's Creek	...	...	...	...	26	230	42	62	1550	228	...	...	...	4	40	...	...	325	...	...	...	...	4
5	George's River to Beavers Cove	...	...	...	...	26	251	44	23	575	94	...	...	...	4	50	...	...	25	...	...	...	...	5
6	Grand Narrows to Christmas Island	...	...	...	...	35	478	64	35	592	224	...	...	...	25	70	...	...	190	...	...	...	...	6
7	North Side East Bay	...	...	...	...	32	360	58	36	547	187	...	...	...	21	53	...	...	221	1800	...	...	...	7
8	South Side East Bay	...	...	...	...	26	220	52	29	450	150	...	...	...	23	54	...	...	109	...	...	...	...	8
9	Little Bras d'Or	5	66	1500	28	40	600	80	97	2900	300	...	...	...	45	300	...	...	210	...	...	606	4	9
10	Little and Big Pond and Sydney Mines	...	...	...	...	10	120	14	37	940	150	...	...	...	1	9	920	...	45	...	...	...	...	10
11	Gabarus, Grand Mira and Big Lake	...	...	...	...	46	1980	138	368	6950	2440	3	300	500	...	...	2000	...	1230	...	...	...	250	11
12	Big Lorraine	1	11	200	3	35	900	70	310	6820	2170	...	...	...	...	...	1500	12	350	...	...	...	200	12
13	Louisburg	1	19	300	4	22	550	43	160	3520	1120	...	...	...	...	...	...	...	140	...	...	...	120	13
14	Kennington Cove	...	...	...	...	10	120	20	70	1540	500	...	...	...	...	...	...	...	50	...	...	...	20	14
15	Main-à-Dieu	1	13	200	6	48	840	128	290	7250	3250	...	...	...	...	...	1446	8	288	...	...	...	70	15
16	Little Lorraine	1	24	700	7	14	320	38	128	3200	2670	...	...	...	...	...	4485	10	180	...	...	...	35	16
17	Bauline	...	...	...	...	10	160	29	85	1925	1700	...	...	...	...	...	1645	7	90	...	...	...	18	17
18	Mira Bay and River	1	21	400	6	15	198	30	134	2435	2330	...	...	...	...	...	2440	6	66	...	...	...	25	18
19	Catalone	...	...	...	...	8	130	21	85	1790	650	...	...	...	...	...	270	4	38	...	...	...	18	19
20	Scattarie Island	1	21	200	7	20	1200	40	80	1600	800	...	...	...	10	100	90	30	198	8000	...	...	68	20
21	Port Morien and Round Island	...	...	...	...	75	1765	152	243	4800	2000	...	...	...	25	250	1900	...	489	2000	...	4000	120	21
	Totals	12	196	4800	65	624	13151	1261	2650	56074	23158	3	300	500	298	1457	18586	77	4812	15620	12000	4756	954	

RETURN showing the Quantity and Value of Fish, etc.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.																FISH PRODUCTS.			TOTAL VALUE.		Number.
		Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or Gaspereaux, brls.	Eels, brls.	Flounders, lbs.	Squid, brls.	Coarse and mixed fish, lbs.	Dogfish, lbs.	Fish oil, galls.	Fish as bait, brls.	Seal skins, number.	$	cts.	
	Cape Breton County.																						
1	From Sydney to Glace Bay	72720	290	...	42	..	4	27000	800	...	2000	15	100	...	18	...	...	80	91	...	20,705	70	1
2	From Lingan to South Bar and Sydney	48720	600	...	64	3	3	30350	600	..	3000	20	120	...	30	...	...	197	285	...	19,361	35	2
3	From Sydney to North-west Arm and Sydney Forks	...	12	..	...		...	...	1200	..	4000	25	50	...	...	...	...	5	550	...	2,254	50	3
4	North Sydney to Ball's Creek	...	350	...	25	..	...	2200	...	...	...	...	10	...	20	...	...	80	70	...	3,304	00	4
5	George's River to Beavers Cove	...	300	...	20	..	...	.	130	...	...	40	18	...	...	...	...	60	50	...	1,806	00	5
6	Grand Narrows to Christmas Island	...	275	...	...	..	...	...	...	...	...	...	9	...	...	...	...	...	80	...	2,070	00	6
7	North Side East Bay	...	75	...	...	..	...	...	...	...	...	...	41	...	...	...	...	..	31	...	1,658	50	7
8	South Side East Bay	...	87	.	...	..	...	...	...	...	...	...	24	...	...	...	...	...	45	...	1,091	50	8
9	Little Bras d'Or	59232	1671	...	130	..	...	2800	...	...	...	...	24	...	28	24	..	620	95	...	20,901	62	9
10	Little and Big Pond and Sydney Mines	...	225	...	75	..	...	...	...	...	...	...	5	...	...	...	...	...	...	...	1,539	00	10
11	Gabarus, Grand Mira and Big Lake	80136	1465	...	100	..	...	...	...	12	9000	65	10	...	10	...	...	712	500	...	33,190	80	11
12	Big Lorraine	...	900	...	200	.	50	...	...	...	...	...	...	...	...	...	...	700	200	...	9,690	00	12
13	Louisburg	41280	650	...	80	..	...	...	...	...	...	...	...	...	...	...	...	500	150	...	13,831	00	13
14	Kennington Cove	19008	40	...	10	..	...	...	...	...	...	...	...	...	...	...	...	60	100	...	4,659	60	14
15	Main-à-Dieu	32592	800	...	105	..	20	340	...	...	...	4	...	...	10	...	...	500	200	...	13,224	60	15
16	Little Lorraine	...	400	...	80	..	10	100	...	2	...	2	...	...	8	...	...	250	40	...	4,357	00	16
17	Bauline	...	200	...	20	..	5	80	...	...	...	1	...	...	4	...	...	120	20	...	2,028	00	17
18	Mira Bay and River	33456	285	...	10	..	2	185	...	...	...	12	...	...	...	...	...	140	200	...	9,490	70	18
19	Catalone	...	200	...	8	..	2	160	...	...	...	1	...	...	...	...	...	100	30	...	1,459	00	19
20	Scattarie Island	32688	1080	...	114	20	9	4000	...	...	...	10	...	2100	150	...	5000	1000	400	20	15,742	60	20
21	Port Morien and Round Island	72720	1083	3475	150	..	...	23100	...	...	...	30	...	.	32	10	...	...	500	...	27,394	25	21
	Totals	492552	10998	3475	1233	23	105	90315	2730	14	18000	225	411	2100	310	34	5000	5124	3637	20	209,759	72	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Materials, &c.—**Nova Scotia**—*Con*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING GEAR OR MATERIALS.								KINDS OF FISH.							Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.									
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Salmon, preserved in cans, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Number.
	Inverness County.			$			$				$			$		$								
1	Port Hood					72	1500	152	400	12000	3800				1	700				200	8000	160	60	1
2	Little Mabou					22	220	38	40	1200	360									80	2000	120	8	2
3	Seaside					14	200	25	79	2100	700									150	4000	100	10	3
4	Little Judique					36	400	72	100	3000	100						100			300	40000	100	16	4
5	Judique					22	260	42	60	1800	500									150	4000	100	10	5
6	Long Point					33	440	54	80	2400	680						1200			400	7000	120	24	6
7	Creignish					18	200	36	60	1800	500						1800			300	4000	100	12	7
8	Low Point					24	240	48	80	2400	800									450	6000	100	16	8
9	Port Hastings	1	78	1600	6	28	400	40	60	1800	500									550	2000	230	30	9
10	Port Hawkesbury	3	175	5000	28	16	240	16	140	4200	1200	3	525	600			1800			320	1000	300	1824	10
11	West Bay to Malagawatch					75	900	95	290	5800	1100									220	900000			11
12	North and South Side River Dennis					49	580	62	185	3700	730									90	280000			12
13	Mabou, Coal Mines and Ben Virrach					16	340	34	21	600	285						220	144		10		200		13
14	Port Bain and Broad Cove					12	210	24	32	640	280									3				14
15	Whycocomagh					7	90	14	8	240	115									5				15
16	East Lake Ainslie					4	32	8	4	120	30													16
17	Mabou Harbour and Light Point					36	815	62	96	2885	749									80	13100	400	30	17
18	Margaree Harbour	1	10	75	5	49	470	89	147	4410	1223						10000		5	45	4420		45	18
19	Broad Cove Marsh to Whale Cove					42	1260	81	90	2650	996						540			140			141	19
20	Margaree Island and River					10	300	26	46	1345	479						2000			40			30	20
21	Doucett's Cove					15	400	45	80	1800	470						2000			50			60	21
22	Friar's Head					17	500	51	90	2000	550						3000			60			70	22
23	Grand Etang					18	450	69	100	2500	700						700			170			160	23
24	Palletts Cove, Pleasant Bay and Fishing Cove					32	1060	92	30	600	600						6000			600			490	24
25	Cheticamp Point and Cape Rouge	1	11	200	4	50	3200	155	50	1000	600						1500			200			200	25
26	Little River and Eastern Harbour	19	265	3100	87	73	6080	271	72	1450	1100						2500			850			524	26
	Total	25	539	9975	130	790	20817	1701	2431	64440	19141	3	525	600	1	700	33360	144	5	5463	1275520	2030	3760	

RETURN showing the Kind and Value of all Fish, etc.—**Nova Scotia**—*Con.*

Number.	Districts.	Kinds of Fish.																		Fish Products.				Total Value.		Number.
		Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or Gaspereaux, brls.	Bass, lbs.	Eels, brls.	Oysters, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, number.	$	cts.	
	Inverness County.																									
1	Port Hood	46392		2400		600	540	2800	400	200	400	200			5			200		800	200	40		30,295	60	1
2	Little Mabou			400		240	50	200	40		100	300	4					16		40	40	10		2,883	60	2
3	Seaside	28392		160		260	50	250	50	150	100	200	6		15			20		50	60	30		8,274	70	3
4	Little Judique			140		160	40	100	20		200	600	10		10			40		30	40	25		3,223	30	4
5	Judique	23736		160		140	30	30	10		1500	300	5		20			20		40	50	20		6,917	90	5
6	Long Point	28800		240		160	40	20			1600	400	15					10		60	70	10		9,582	20	6
7	Creignish			240		140	30				1500	100	40					15		40	75	5		3,348	20	7
8	Low Point			250		130	40				300	200	35					10		60	65	15		3,578	90	8
9	Port Hastings			250		120	25				300	3500	30		40			10		50	55	10		4,643	70	9
10	Port Hawkesbury			150		130	25				1000	1200	32		10			30		1600	45	20		30,790	40	10
11	West Bay to Malagawatch		17	160											15					90	45			10,849	50	11
12	North and South Side River Dennis			50									8		18	260				22	12			4,636	60	12
13	Mabou, Coal Mines and Ben Virrach	22224		30		560	5	6		75	350	4000	9	60	6			8		23	34			5,174	10	13
14	Port Bain and Broad Cove	8160		15			4				100	1000						2		10	5			1,794	50	14
15	Whycocomagh			85							600	2000	12		9		200			40	11			696	50	15
16	East Lake Ainslie										1000		20		15									330	00	16
17	Mabou Harbour and Light Point			900	2		77	51		50								26	48	125	55	15		5,247	25	17
18	Margaree Harbour	9888	8	1293	3		38	60		1800	300		50		20			62	120	200	100	30		11,765	80	18
19	Broad Cove Marsh to Whale Cove	15360	8	760	1		43	34							8			70	65	163	94	30		9,845	40	19
20	Margaree Island and River	11904		84			20	11		240			103		25			14	19	23	17			4,623	95	20
21	Doucett's Cove			600			50	30										75	150	500	125			5,055	00	21
22	Friar's Head			630			60	40										85	200	550	145			5,802	50	22
23	Grand Etang	25128		800		200	70	50	40						40			130	550	700	270			14,429	10	23
24	Palletts Cove, Pleasant Bay and Fishing Cove	14640		184			24	15	30									43	130	85	702		85	16,351	50	24
25	Cheticamp Point and Cape Rouge	45000		1300	8		110	65	150	1000					100			190	250	760	950			22,944	25	25
26	Little River and Eastern Harbour	19248		7530	25		207	105	65	2000					125			512	510	3519	3100	500		57,343	05	26
	Totals	298872	33	18811	39	2840	1578	3867	805	5515	9350	14000	379	60	481	260	200	1588	2012	9580	6365	760	85	280,427	50	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Materials, &c.—**Nova Scotia**—*Con.*

Number.	Districts.	Fishing Vessels and Boats.							Fishing Gear or Materials.					Kinds of Fish.							Number.
		Vessels.				Boats.			Gill Nets.			Trawls.									
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	
	Richmond County.			$			$				$		$								
1	Arichat and Petit de Grat	7	153	1400	29	165	1570	243	1160	36700	5400	184	560	...	...	2035	...	240	52320	36	1
2	Cape Auguet, Janvrin's Island, Port Royal and West Arichat	3	51	650	9	220	2450	292	1770	40090	7940	228	884	...	...	2633	...	82	61832	35	2
3	Rocky Bay and Cape Le Ronde	...	...	...	...	60	500	90	420	8000	2100	74	320	...	...	343	...	65	20352	12	3
4	Descousse, Poulamond and Martinique	11	356	4200	91	61	610	108	394	8100	1730	59	220	...	...	736	...	92	...	15	4
5	St. Peter's	4	95	1700	23	13	200	18	135	2700	600	...	...	...	...	45	...	...	...	...	5
6	River Bourgeoise	11	330	5000	95	25	250	32	150	3000	1000	...	...	...	...	50	...	10	38400	...	6
7	Grandique and Port St. Louis	...	...	...	...	28	600	45	280	5700	1800	...	...	...	...	250	...	...	...	...	7
8	River Inhabitants and Basin	9	304	3500	45	152	1500	210	230	4650	1200	...	...	...	...	2800	...	55	...	...	8
9	Port Malcolm and Gut of Canso	10	324	2900	62	95	975	140	400	9750	3370	...	...	...	...	1153	...	830	...	...	9
10	West Bay	...	...	...	...	95	950	190	210	4180	1420	...	...	...	6	400	...	...	...	...	10
11	Fourchu to St. Esprit	...	...	...	...	54	1850	151	255	7000	1775	...	...	...	...	550	1000	480	86748	...	11
12	L'Archevêque to Point Michaud	...	...	...	...	79	1610	183	620	16100	4350	...	...	1500	...	850	500	460	61104	...	12
13	L'Ardoise, Lower L'Ardoise and Rockdale	1	11	200	4	307	9910	450	3100	47450	21700	...	...	1860	8	2500	...	1450	51792	...	13
14	Grand Grève, St. Peter's East and Indian Res.	...	...	...	...	51	1410	125	310	7480	2180	...	...	...	...	540	...	230	33600	...	14
	Totals	56	1624	19550	358	1405	24385	2277	9434	200900	56565	545	1984	3360	14	14885	1500	3994	406148	98	

RETURN showing the Quantity and Value of Fish, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.																FISH PRODUCTS.		TOTAL VALUE.		Number.
		Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake Sounds, lbs.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelt, lbs.	Alewives or gasperaux, brls.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	$	cts.	
	Richmond County.																					
1	Arichat and Petit de Grat	2590	5	...	1703	226	30	1201	37350	...	...	26	...	11250	...	195	146	1980	214	47,217	00	1
2	Cape Auguet, Janvrin's Island, Port Royal and West Arichat	2877	9	...	2433	76	4	574	3700	...	...	193	...	15200	...	219	263	4240	273	49,506	90	2
3	Rocky Bay and Cape Le Ronde	380	1	...	304	25	2	256	...	...	...	21	...	13850	...	31	72	650	45	10,795	65	3
4	Descousse, Poulamond and Martinique	7459	...	...	223	9	...	40	1900	...	...	51	...	38100	...	36	174	1245	115	38,341	25	4
5	St. Peter's	825	...	...	130	...	...	...	...	...	...	...	20	...	...	...	...	240	25	4,179	50	5
6	River Bourgeoise	4000	...	...	150	...	...	...	...	...	...	...	...	...	...	...	...	2700	70	25,395	00	6
7	Grandique and Port St. Louis	500	...	...	150	...	...	...	...	...	4250	150	15	...	...	...	...	170	28	4,505	50	7
8	River Inhabitants and Basin	4560	...	...	3010	...	...	...	...	...	3400	600	20	...	...	...	...	120	60	42,191	00	8
9	Port Malcolm and Gut of Canso	356	...	...	.	...	...	...	...	...	...	1083	...	...	...	...	...	400	11	22,954	50	9
10	West Bay	500	...	...	...	...	...	...	...	...	...	10	20	...	...	...	...	150	15	3,997	50	10
11	Fourchu to St. Esprit	3250	...	3000	115	70	...	114	3600	600	...	49	27	9000	4700	148	108	900	180	43,499	10	11
12	L'Archevêque to Point Michaud	650	...	...	100	25	...	63	3200	400	...	27	17	2500	2250	19	25	405	70	27,136	05	12
13	L'Ardoise, Lower L'Ardoise and Rockdale	3600	...	...	1550	53	...	850	7000	...	...	550	18	9000	1900	230	140	2370	295	69,448	15	13
14	Grand Gréve, St. Peter's East and Indian Reserve	690	...	...	80	24	...	37	...	...	2100	38	40	1600	3600	31	30	215	40	16,683	50	14
	Totals	32237	15	3000	9948	508	36	3135	56750	1000	9750	2798	177	100500	12450	909	958	15785	1441	405,850	60	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Materials, &c.—Nova Scotia—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.						FISHING GEAR OR MATERIALS.								KINDS OF FISH.						Number.
		Vessels.			Boats.			Gill Nets.			Seines.			Trap Nets.		Salmon, fresh, lbs.	Salmon, preserved in cans, lbs.	Salmon, salted, brls.	Herring, salted, brls	Mackerel, fresh, lbs.	Mackerel, salted, brls.	
		Number.	Tonnage.	Value.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.							
	Victoria County.					$				$			$		$							
1	Meat Cove to Bay St. Lawrence Pond	....	....	....	65	992	118	61	1540	675	....	....	....	....	....	1100	200	18	35	768	138	1
2	Cape North to White Point	....	....	....	99	1882	170	97	2360	1085	....	....	....	....	....	1100	1842	28	54	....	562	2
3	New Haven and Neil's Harbour	....	....	....	101	3100	145	190	3420	1520	....	....	....	....	....	50	96	....	56	....	37	3
4	Green Cove and North Ingonish	....	....	....	87	1580	134	105	2516	1156	....	....	....	....	....	500	296	38	40	....	16	4
5	New Campbellton, Big Bras d'Or and Bird Island	....	....	....	57	592	57	206	4540	1372	....	....	....	....	....	....	....	....	250	....	....	5
6	Englishtown, St. Ann's Bay and Black Head	....	....	....	52	630	75	225	6500	2550	2	200	75	2	1000	1700	....	27	1000	....	56	6
7	Eel Cove, Indian Brook and North River	....	....	....	50	590	91	190	4340	1720	....	....	....	....	....	1600	....	7	210	....	4	7
8	Breton Cove, Little River and Black Rock	....	....	....	24	370	44	100	2640	980	....	....	....	....	....	....	....	....	70	....	25	8
9	French River, Wreck Cove and Path End	....	....	....	42	680	53	240	5280	2000	....	....	....	....	....	....	....	13	80	....	45	9
10	South Bay, Ingonish and Middle Head	....	....	....	100	2700	210	380	10000	4000	....	....	....	....	....	500	700	53	300	..	50	10
11	Kemp Head and Baddeck	....	....	....	54	659	70	85	1518	464	....	....	....	....	....	1650	150	1	285	200	5	11
12	North and South Side Little Narrows	....	....	....	45	452	60	75	1371	345	....	....	....	....	....	530	....	2	460	....	1	12
13	Washabuck and Iona	....	....	....	80	749	138	192	3075	640	....	....	....	....	....	1120	....	1	717	275	2	13
	Totals	....	....	....	856	14976	1365	2146	49100	18507	2	200	75	2	1000	9850	3284	188	3557	1243	941	

RETURN showing the Quantity and Value of Fish, &c.—**Nova Scotia**—*Con.*

Number.	Districts.	KINDS OF FISH.															FISH PRODUCTS.			TOTAL VALUE.		Number.
		Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Haddock, dried, cwt.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Oysters, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Dogfish, lbs.	Fish oil, galls.	Fish as bait, brls.	Seal skins, number	$	cts.	
	Victoria County.																					
1	Meat Cove to Bay St. Lawrence Pond	30672	270	16	....	....	50	....	....	....	1	....	....	....	28	57000	275	512	....	11,576	06	1
2	Cape North to White Point	20772	796	62	20	43	2800	....	....	....	21	....	....	....	51	81400	695	777	....	19,997	70	2
3	New Haven and Neil's Harbour	24144	3100	250	22	22	...	....	....	....	....	....	....	....	45	75000	2500	600	35	21,409	45	3
4	Green Cove and North Ingonish	14448	1360	178	14	27	....	....	....	....	20	....	....	....	34	67000	1140	405	19	11,974	75	4
5	New Campbellton, Big Bras d'Or and Bird Island	40668	210	10	10	9	900	....	....	....	8	....	....	20	5	12000	360	....	33	10,573	35	5
6	Englishtown, St. Ann's Bay and Black Head	.	120	80	370	7	....	100	3000	....	20	....	....	600	....	2000	210	....	3	9,998	25	6
7	Eel Cove, Indian Brook and North River	...	90	....	70	....	....	1600	24240	....	85	....	400	35	....	10000	70	....	....	4,345	50	7
8	Breton Cove, Little River and Black Rock	7824	314	120	25	....	3000	200	....	....	....	....	....	32	....	22000	290	....	30	4,684	55	8
9	French River, Wreck Cove and Path End	13728	670	200	44	....	4400	....	....	....	....	....	....	48	....	21000	550	..	30	8,359	10	9
10	South Bay, Ingonish and Middle Head	24408	1450	375	50	60	4000	2000	3000	....	20	....	....	900	....	102500	1200	....	40	20,974	10	10
11	Kemp Head and Baddeck	....	2015	....	..	..	....	1780	2790	20	24	85	....	....	35	....	108	38	....	10,803	40	11
12	North and South Side Little Narrows	....	1015	....	....	....	....	800	3140	28	55	265	....	.	40	....	140	34	...	8,183	00	12
13	Washabuck and Iona	....	2840	....	....	....	....	...	2340	23	20	500	....	....	36	....	326	60	....	17,198	80	13
	Totals	176664	14250	1291	625	168	15150	6480	38510	71	274	850	400	1635	274	449900	7864	2426	190	160,078	01	

RECAPITULATION

Of the Yield and Value of the Fisheries for the Island of Cape Breton, for the Year 1897.

Kinds of Fish.		Quantity.	Rate.		Value.	
			$	cts.	$	cts.
Salmon, pickled	Brls.	284	15	00	4,260	00
do fresh	Lbs.	65,156		20	13,031	20
do preserved	Cans.	3,428		15	514	20
Herring, pickled	Brls.	28,717	4	00	114,868	00
do fresh or frozen	Lbs.	1,292,640	0	01	12,926	40
do smoked	do	12,000	0	02	240	00
Mackerel, pickled	Brls.	9,649	15	00	144,735	00
do fresh	Lbs.	8,029	0	12	963	48
Lobsters, preserved	Cans.	1,374,236	0	20	274,847	20
do fresh in shell	Cwt.	131	5	00	655	00
Cod, dried	do	76,286	4	00	305,144	00
do tongues and sounds	Brls.	54	10	00	540	00
Haddock, dried	Cwt.	14,050	3	00	42,150	00
do fresh	Lbs.	9,315	0	03	279	45
Hake, dried	Cwt.	5,023	2	25	11,301	75
do sounds	Lbs.	841	0	50	420	50
Pollock, dried	Cwt.	3,408	2	00	6,816	00
Halibut, fresh	Lbs.	167,730	0	10	16,773	00
Trout	do	19,560	0	10	1,956	00
Shad	Brls.	14	10	00	140	00
Smelt	Lbs.	80,260	0	05	4,013	00
Alewives	Brls.	3,473	4	00	13,892	00
Bass	Lbs.	60	0	10	6	00
Eels	Brls.	1,343	10	00	13,430	00
Oysters	do	1,110	4	00	4,440	00
Flounders	Lbs.	102,600	0	05	5,130	00
Tom cod or frost fish	do	13,050	0	05	652	50
Squid	Brls.	4,442	4	00	17,768	00
Coarse and mixed fish	do	3,308	2	00	6,616	00
Fish oil	Gals.	38,353	0	30	11,505	90
Fish as bait	Brls.	13,869	1	50	20,803	50
Fish used as manure	do	760	0	50	380	00
Seal skins	No.	295	1	25	368	75
Dogfish	Lbs.	454,900	0	01	4,549	00
Total for 1897					1,056,115	83
do 1896					1,043,547	47
Increase					12,568	36

RECAPITULATION

SHOWING the Number and Value of Fishing Vessels, Boats, Nets, &c., in the **District No.1 of Nova Scotia,** for the Year 1897.

——	Value.	Total.
	$ cts.	$ cts.
93 vessels, 2,359 tons	33,825	
3,675 boats	73,329	
16,661 gill nets, 371,414 fathoms	117,371	
8 seines, 1,125 fathoms	1,175	
3 trap-nets	1,700	
1,875 trawls	9,280	
31 weirs	279	
44 smelt-nets	740	
14,098 hand lines	7,985	
		245,684
71 lobster canneries	55,800	
187,119 lobster traps	92,705	
		148,505
16 freezers and ice-houses	1,920	
1,042 smoke and fish-houses	39,105	
284 piers and wharfs	58,828	
49 tugs, steamers and smacks	3,620	
		103,473
Total value		497,662

NOVA SCOTIA--

Return showing the Number, Tonnage and Value of Vessels and Boats, and the the Number of Men employed in the Province of

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.						
		Vessels.				Boats.			Gill Nets.			Trawls.			
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.
	Antigonish County.			$			$				$		$		
1	Harbour Bouché, Linwood, Cape Jack and Little Tracadie	2	28	275	5	72	797	75	160	4844	1239	34	137	400	627
2	Big Tracadie, Bayfield and South Side Harbour	1	23	400	4	73	836	73	260	7878	4707	12	39	19172	720
3	North Side of Antigonish Harbour, Lakeville, Ballantyne's Cove and South Side Cape George	..	..	....	..	49	1030	59	80	2348	948	43	90	2100	319
4	North Side Cape George and Georgeville	..	..	....	..	26	355	40	35	1618	557	20	103	900	106
5	Malignant Cove, Arisaig, Doctors Brook, Knoidart and Moidart	..	..	....	..	31	712	47	60	3216	1270	22	126	4900	196
	Totals	3	51	675	9	251	3730	294	595	19904	8721	131	495	27472	1968
	Values $	..	..	....	..	....	....	....	....	...	....	....	....	5494	7872
	Colchester County.														
1	Sterling	..	..	....	..	15	150	15	....	..	....	....	....	.....	...
2	Stewiacke	..	..	....	..	70	700	140	190	7200	1590	....	....	7500	....
3	Five Islands	..	..	....	..	8	245	18	.. .	. .	....	8	278	2250	....
4	Economy	..	..	....	..	7	170	27	7	2475	480	....	....	5400	....
5	Little Bass River to Highland Village	..	..	....	..	19	538	47	19	6900	1325	...	....	25676	...
6	Great Village to Queen's Village	..	..	....	..	16	392	32	16	5640	1275	....	....	13134	...
	Totals	..	..	....	..	135	2195	279	232	22215	4670	8	278	53960	....
	Values $	..	..	....	..	....	....	....	....	....	....	....	....	10792	....

District No. 2.

Quantity and Value of all Fishing Materials, the Kinds and Quantities of Fish, and Nova Scotia (District No. 2) for the Year 1897.

KINDS OF FISH.																						
Herring, fresh, lbs.	Mackerel, salted, brls.	Mackerel, fresh, lbs.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Trout, lbs.	Smelts, lbs.	Alewives, brls.	Bass, lbs.	Eels, brls.	Oysters, brls.	Flounders, lbs.	Tom cod, lbs.	Squid, brls.	Coarse & mix'd fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	TOTAL VALUE.
																						$
138200	93	....	70320	196	...	14	36	92	150	1000	4	....	8	...	5600	...	3	..	150	336	180	21474
16608	68	3930	25584	129	....	...	155	....	300	2500	9	800	84	60	2500	...	1	..	13	30	66	15915
.. ..	10	361	64820	212	....	5	597	1072	1000	125	59	200	5	...	2700	280	106	20	167	38	160	18807
9900	18	2610	14496	44	....	6	431	805	....	. .	1	800	...	...	...	...	10	.	216	44	36	6024
1120	37	1850	32640	20	....	14	620	1250	....	....	...	1240	...	...	700	...	8	..	215	148	80	11840
165828	226	8751	207860	601	...	39	1839	3219	1450	3625	73	3040	107	60	11500	280	128	20	761	596	522	....
1658	3390	1050	41572	2404	...	117	4138	1609	145	181	292	304	1070	240	575	14	512	40	228	894	261	74060
Smoked.							Halibut, lb	Shad, lbs.														
......	....	...	20688	....	....	....	....	10	300	1400	...	...	2	50	.....	...	...	..	...	...	50	5212
......	....	....	.....	....	....	....	....	50	600	....	250	1500	..	...	.....	...	...	..	...	...	...	3210
.....	...	....	..	315	1750	34	5400	24	....	...	...	....	....	...	.....	...	...	..	80	...	...	2666
30000	....	...	.....	10	...	...	....	145	200	...	...	....	....	.	.....	...	...	..	...	...	...	3190
.. ...	..	...	. ...	....	....	...	....	391	300	....	...	...	...	...	.....	...	...	..	...	...	...	9075
......	....	...	....	....	...	...	....	120	200	....	...	...	....	...	.....	...	...	..	...	...	...	3847
30000	....	....	20688	325	1750	34	5400	740	1600	1400	250	1500	2	50	.....	...	...	..	80	...	50	27200
600	....	....	4137	1300	53	102	540	7400	160	700	1000	150	20	200	.....	...	...	..	24	...	25	. ...

RETURN showing the Number, Tonnage and Value of Vessels and Boats,

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.				
		Vessels.				Boats.			Gill Nets.			Trawls.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Cumberland County.			$			$				$		$
1	Pugwash, Port Philip and Gulf Shore	....	....	....	....	174	4721	180	107	3280	1011	....	....
2	Wallace	....	....	....	....	10	150	10	....	....	....	....	....
3	River Philip	....	....	....	....	8	90	8	....	....	....	....	....
4	Maccan and Nappan	....	....	....	....	....	....	....	3	100	40	....	....
5	Minudie to Apple River	....	....	....	....	12	320	23	180	1900	610	1	12
6	Advocate	....	....	....	....	7	200	15	7	200	48	1	15
7	Spencer Island	1	15	300	3	5	185	11	4	150	45	3	35
8	Port Greville	....	....	....	....	8	550	25	20	500	200	4	60
9	Parrsboro'	....	....	....	....	4	75	7	3	100	40	....	....
	Totals	1	15	300	3	228	6291	279	324	6230	1994	9	122
	Values $	....	....	....	....	....	....	....	....	....	....	....	....

nd the Quantity and Value of all Fish, &c.—**Nova Scotia**—*Con.*

KINDS OF FISH.																						TOTAL VALUE.
Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or gaspereaux, brls.	Bass, lbs.	Eels, brls.	Oysters, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	
																						$
..	....	....	490952	....	....	....	....	..	..	...	....	....	....	51500	...	....	..	557	..	2400	600	106,893
...	...	..	.....	....	....	....	....	..	..	...	..	300	....	15500	225	2000	8	550	..	....	...	4,185
...	....	....	....	..	....	....	....	..	..	....	....	500	..	.....	98	...	..	....	..	....	...	442
500	....	....	..	....	....	....	....	..	..	....	....	....	....	400	30	..	..	....	..	....	...	240
900	300	1500	....	50	....	...	50	..	..	20	500	400	250	500	10	....	..	....	..	10	...	4,655
200	45	....	.....	75	1	1000	200	..	..	60	200	....	..	.....	....	....	..	....	25	6	...	1,316
600	50	1000	...	92	1	1000	10	10	..	45	1300	....	...	.....	....	...	..	....	20	10	...	1,032
000	100	3000	..	117	2	...	10	6	30	10	500	....	....	.....	....	.	..	....	10	8	...	1,461
300	25	....	....	30	....	....	12	..	..	...	500	300	..	.. ..	....	....	..	....	..	....	...	596
500	520	5500	490952	364	4	2000	282	16	30	135	3000	1500	250	67900	363	2000	8	1107	55	2434	600	....
300	2080	55	98190	1456	40	60	846	36	15	270	300	150	2500	3395	1452	200	80	4428	16	3651	300	120,820

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.										KINDS OF FISH.								Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.		Salmon, fresh, lbs.	Salmon, preserved in cans, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls	Lobsters, preserved in cans, lbs.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.									
	Guysborough County.			$			$				$					$											
1	Ecum Secum	...	...	...	...	80	1600	160	25	625	100	5	250	75	...	...	...	...	300	...	...	20	...	...	...	17376	1
2	Marie Joseph	...	...	...	...	37	740	60	25	625	100	...	...	...	...	...	...	...	...	...	...	50	...	...	...	41136	2
3	Liscomb, Spanish Bay and Gegoggin	...	...	...	...	80	1375	130	60	1500	350	1	120	50	...	...	...	...	850	...	...	100	...	...	...	72740	3
4	St. Mary's River and Bay	...	...	...	...	30	600	45	60	1500	650	...	...	...	...	...	...	...	3000	...	300	250	...	...	...	38400	4
5	Wine Harbour	...	...	...	...	15	200	20	60	1500	300	1	60	25	...	...	1	5	650	...	100	300	...	...	...	...	5
6	Indian Harbour and Lake	...	...	...	...	38	760	43	100	2500	500	...	...	...	...	...	...	...	450	...	...	370	...	...	...	17136	6
7	Holland Harbour and Indian River	...	...	...	...	16	320	16	28	700	140	...	...	...	...	...	...	...	420	...	...	225	5000	...	...	...	7
8	Port Beckerton	...	...	...	...	37	750	50	110	2640	550	...	...	...	...	...	2	30	...	...	...	650	...	...	7	46272	8
9	Fisherman's Harbour	...	...	...	...	34	680	38	85	2125	425	...	...	...	...	...	...	...	...	...	...	375	...	...	10	14928	9
10	Isaac's Harbour and Country Harbour	...	...	...	...	45	1000	68	168	4200	840	2	100	50	...	...	...	...	1200	...	...	750	...	...	25	...	10
11	From Isaac's Harbour to Whitehead	10	163	4622	60	813	24488	852	5315	106300	26575	2	210	800	6	1450	180	1080	2000	1055	1000	7000	45000	25440	402	275018	11
12	From Whitehead to Canso, including Tittle	5	55	1300	20	210	10980	320	1590	31800	9540	6	900	975	12	4900	200	1200	6875	...	300	2000	182800	459700	107	314710	12
13	Canso Tittle to Salmon River	1	11	400	3	300	4315	310	4115	82300	24690	7	850	750	38	4650	350	2100	6900	100	...	2400	20000	240000	800	72576	13
14	From Salmon River to Antigonish County Line, including Cook's Cove, Guysborough, North Shore and Strait of Canso	9	273	5850	45	500	10730	510	7448	148960	44688	6	680	650	...	...	350	2100	21000	...	...	9364	130000	290000	1087	23280	14
	Totals	25	502	12172	128	2235	58538	2622	19179	387275	109448	30	3170	3375	56	11000	1083	6515	43645	1155	1700	23854	382800	1015140	2438	933572	
	Values $	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8729	173	340	95416	3828	121817	36570	186714	

RETURN showing the Quantities and Values of all Kinds of Fish, &c.—**Nova Scotia**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.																		FISH PRODUCTS.				TOTAL VALUE.	Number.
		Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod, tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake, sounds, lbs.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Bass, lbs.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, number.	$	
1	Ecum Secum	....	56	....	2000	....	....	....	....	....	600	250	6	..	5	....	600	....	....	50	500	45	....	4,863	1
2	Marie Joseph	....	448	....	1500	40	....	....	10	500	100	300	10	....	10	...	800	....	....	400	450	110	....	11,509	2
3	Liscomb, Spanish Bay and Gegoggin	....	550	....	....	50	....	....	15	2000	1000	600	50	....	....	....	1000	....	..	500	550	40	....	19,073	3
4	St. Mary's Bay and River	....	112	....	....	10	....	....	....	...	1000	400	100	...	20	...	900	....	...	100	440	20	....	11,283	4
5	Wine Harbour	....	40	....	....	5	...	...	....	....	400	200	....	....	....	....	700	....	....	40	150	....	..	1,847	5
6	Indian Harbour and Lake	....	50	....	....	5	..	....	....	...	350	450	20	....	10	...	300	....	....	50	380	....	....	6,050	6
7	Holland Harbour and Indian River	...	15	....	....	2	....	....	....	....	1000	....	5	....	4	....	250	....	....	20	180	50	....	1,573	7
8	Beckerton	....	224	....	....	41	....	....	12	1000	.....	......	10	...	8	....	1000	....	....	200	370	125	....	13,958	8
9	Fisherman's Harbour	....	75	....	....	11	....	....	....	....	.....	..	5	....	6	...	500	....	....	70	300	40	...	5,565	9
10	Isaac's Harbour and Country Harbour	....	125	...	....	20	....	...	10	800	1500	1000	10	....	8	....	600	....	....	130	400	....	...	5,264	10
11	From Isaac's Harbour to Whitehead	340	7665	....	....	2000	250	100	1135	6500	5000	8000	600	....	350	....	....	....	....	8000	5125	700	50	152,475	11
12	From Whitehead to Canso, including Tittle	640	5919	6	1347600	4690	500	200	1030	58320	720	.....	100	5000	75	1470	....	1200	50	13550	3200	800	....	237,485	12
13	Canso Tittle to Salmon River	160	1975	....	96000	1400	245	150	68	.....	1500	10000	55	....	15	....	....	1000	...	2170	6500	180	....	98,563	13
14	From Salmon River to Antigonish County Line, including Cook's Cove, Guysborough, North Shore and Strait of Canso	....	2825	....	400000	1280	310	170	65	9700	1000	13000	690	....	120	....	..	850	50	1800	5000	60	..	144,019	14
	Totals	1140	20079	6	1847100	9557	1305	620	2345	78820	14170	34200	1661	5000	631	1470	6650	3050	100	27080	23545	2170	50	.....	
	Values $	5700	80316	60	55413	28671	2936	310	4690	7882	1417	1710	6644	500	6310	73	332	12200	200	8124	35317	1085	50	713,527	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.										KINDS OF FISH.							Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.									
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	
	Halifax County.			$			$				$			$		$		$								
1	North Shore	..	....	....	....	124	1240	372	657	13900	1935	62	6200	3000	..	....	5	35	2400	200	75	......	120000	10	......	1
2	East St. Margaret's	..	....	....	..	120	1200	200	612	12250	1800	23	2300	1200	20	4000	90	450	3000	250	100	......	130000	25	......	2
3	Indian Harbour	5	90	1500	25	500	5000	500	4515	90300	550	22	2200	1000	20	800	25	250	6000	300	1000	10000	150000	30	....	3
4	Peggy's Cove	2	21	600	11	80	800	80	300	7000	1500	8	800	500	..	...	15	150	2500	150	350	2000	4500	20	....	4
5	Dover	5	85	1500	30	220	2500	150	774	72000	7000	40	4000	2100	..	...	26	208	6200	290	1050	8000	160000	35	.....	5
6	Prospect	1	22	400	5	135	2500	200	450	15000	2500	40	4000	2200	..	...	120	380	12000	......	500	......	1000	260	4656	6
7	Terence Bay	5	65	1000	17	200	2800	250	300	10000	2000	28	3000	1600	..	....	115	350	60	......	60	......	....	300	13008	7
8	Pennant	8	120	2000	32	40	50	75	150	4500	1000	11	900	450	..	...	60	150	100	......	140	......	......	12	..	8
9	Sambro	9	200	3000	40	50	600	108	280	7000	2000	9	750	390	..	....	40	100	300	......	20	......	...	10	73632	9
10	Ketch Harbour	1	17	300	5	60	800	125	300	7500	2100	16	1600	900	..	...	42	150	1000	......	80	......	200	5	......	10
11	Portuguese Cove	..	....	....	....	50	1000	100	350	10000	2500	18	1800	950	..	....	25	75	200	......	30	......	......	20	....	11
12	Herring Cove	5	180	2000	30	68	700	50	80	2500	600	24	2500	1300	..	...	80	160	300	......	15	700	10500	12	....	12
13	Ferguson's Cove	1	30	400	60	34	600	50	60	1700	500	40	3200	1700	..	....	10	30	180	......	80	1000	....	....	.....	13
14	Bedford	..	....	....	....	....	....	....	.....	....	.....	...	......	.....	..	..	...	....	350	.....	....	......	......	.....	...	14
15	Halifax	2	100	5000	30	25	500	35	10	250	70	10	1000	600	..	...	50	140	.....	......	10	....	....	......	...	15
16	Eastern Passage and Devil's Island	1	15	500	3	87	1600	74	235	16000	1060	....	.....	.....	..	....	...	....	236	......	40	8500	1750	2	......	16
17	Lawrencetown and Cow Bay	..	...	......	....	17	274	14	110	6200	410	....	.....	....	..	...	...	....	258	......	45	1500	200	1	. .	17
18	Seaforth and Three Fathom Harbour	1	35	700	11	30	318	27	162	9700	620	....	.. ..	.....	..	...	...	....	240	... ..	305	... ..	......	2	....	18
19	West Chezzetcook	5	258	6150	75	135	1290	61	341	20460	1200	....	.....	....	..	.....	...	....	.....	......	715	.....	....	6	....	19
20	East Chezzetcook	1	47	1500	14	50	610	38	117	7000	420	....	...	....	..	.....	...	....	.....	. ...	180	. ....	.....	....	....	20
21	Petpiswick Harbour	1	23	275	5	52	840	42	110	6600	400	...	....	.....	..	.....	...	....	.....	......	70	......	. .	27	24432	21
22	Musquodoboit Harbour	..	...	......	....	60	1111	52	120	7200	450	....	.....	.. ...	..	...	...	.. ..	700	......	160	......	......	3	... .	22

23	Jeddore	3	86	1500	25	92	1580	72	220	13200	825	1	175	50	...	...	...	...	150	...	374	...	...	10	28896	23
24	Clam Harbour and Owl's Head	4	68	2050	19	78	1477	57	315	18900	1200	2	265	400	1	150	...	...	100	48	460	...	...	23	25824	24
25	Ship Harbour	1	11	200	5	15	295	17	50	3000	175	...	...	...	...	...	...	...	...	...	128	...	...	3	2496	25
26	Pleasant Harb'r and Tangier	...	...	...	...	52	1104	55	356	3392	501	...	...	...	...	...	2	13	...	...	258	...	...	2	..	26
27	Pope's Harbour and Gerrard's Island	...	...	...	...	19	307	22	57	1140	178	...	...	...	...	...	...	...	...	...	302	...	...	1	28752	27
28	Spry Bay, Taylor's Head and Mushaboon	3	71	1800	16	50	900	57	244	4880	732	...	...	...	...	...	...	...	...	...	351	...	...	40	59040	28
29	Sober Island and Sheet Harbour	...	...	...	...	49	964	49	182	3640	590	...	...	...	...	...	...	...	...	...	465	...	...	...	49008	29
30	Beaver Harbour and Salmon River	...	...	...	...	7	122	9	17	340	70	...	...	...	...	...	...	...	...	445	30	...	...	...	64944	30
31	Quoddy, Harrigan Cove, and Mitchell's Bay	1	10	100	4	13	110	12	16	320	48	...	...	...	...	...	...	...	...	...	27	...	.	...	162864	31
	Totals	65	1554	32475	462	2510	33192	2953	11490	365872	34934	354	34690	18340	41	4950	705	2641	36274	1792	7900	31700	578150	859	537552	
	Values $	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7254	358	31600	317	69378	12885	107510	

RETURN showing the Quantity and Value of Fish, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.																		FISH PRODUCTS.			TOTAL VALUE.	Number.
		Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod, Tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake, sounds, lbs.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Halifax County.																						$	
1	North Shore	....	112	...	....	20	112	25	50	....	500	1	....	25	....	12000	1000	5	50	100	25	....	17,239	1
2	East St. Margaret's	....	300	...	....	50	150	30	40	....	200	....	....	20	....	8000	9000	10	45	90	30	....	19,959	2
3	Indian Harbour	....	1000	1	....	300	500	1200	100	2000	150	....	....	20	....	7000	6000	12	75	1500	150	....	32,463	3
4	Peggy's Cove	...	1000	1	....	50	150	30	75	800	....	....	....	10	....	2000	400	6	30	800	60	....	8,108	4
5	Dover	...	1100	2	....	400	600	1300	125	1900	50	....	....	15	...	2500	7000	10	80	1520	90	....	34,694	5
6	Prospect	100	600	....	300	50	50	40	100	280	100	.	800	20	10	2000	2500	.	...	300	40	....	17,375	6
7	Terence Bay	40	1100	2	200	80	150	120	200	500	200	.	1500	50	15	2500	3000	..	....	400	60	....	16,157	7
8	Pennant	50	800	....	....	50	70	60	50	200	100	..	500	5	2	500	500	....	...	250	49	....	4,928	8
9	Sambro	....	500	..	....	20	5	5	100	150	80	....	....	2	...	200	300	....	...	100	10	200	13,492	9
10	Ketch Harbour	60	150	....	800	....	12	10	50	100	....	..	60	1	....	250	200	....	....	40	....	....	1,726	10
11	Portuguese Cove	30	50	....	1000	....	10	15	30	....	....	....	....	....	....	200	500	....	....	....	6	....	974	11
12	Herring Cove	15	400	....	18000	...	250	200	50	10000	....	....	....	....	....	100	100	....	....	150	100	....	5,749	12
13	Ferguson's Cove	10	10	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	10	....	....	475	13
14	Bedford	....	....	....	....	....	....	....	....	....	300	....	....	....	10	....	....	....	....	....	....	....	200	14
15	Halifax	....	400	....	....	....	100	....	....	....	800	....	....	....	....	....	200	....	....	150	....	....	2,000	15
16	Eastern Passage and Devil's Island	1200	526	1	44000	170	3	....	90	7940	....	....	....	9	6	4200	....	....	....	390	36	....	11,935	16
17	Lawrencetown and Cow Bay	900	114	....	....	17	....	....	27	556	260	..	5500	22	5	2500	....	....	....	80	8	....	6,001	17
18	Seaforth and Three Fathom Harbour	800	107	....	....	11	..	....	21	710	110	..	2000	20	5	5000	....	....	.	50	10	....	6,393	18
19	West Chezzetcook	1200	3417	1	....	270	....	....	57	6200	60	.	4700	4	8	2350	....	....	..	1260	156	....	25,238	19
20	East Chezzetcook	800	738	.	....	88	....	.	74	1100	450	.	1700	22	10	4000	....	....	....	320	58	....	8,895	20
21	Petpiswick Harbour	700	430	...	....	82	2	....	193	800	200	..	600	4	7	3200	....	....	....	200	44	60	11,959	21
22	Musquodoboit Harbour	800	644	....	....	78	....	....	170	3220	750	..	6000	1	9	3250	....	....	....	310	60	....	8,872	22
23	Jeddore	1300	1624	1	....	70	100	200	244	3695	100	.	1375	4	13	6000	....	....	....	740	130	75	22,834	23
24	Clam Harbour and Owl's Head	1420	476	....	....	45	....	..	23	1900	400	..	750	2	4	7000	....	....	....	180	42	60	17,376	24

25	Ship Harbour	800	355	...	...	22	...	...	12	1010	50	..	350	28	4	1200	...	...	...	200	10	...	6,977	25
26	Pleasant Harbour	...	78	...	...	10	...	...	5	...	...	..	..	...	...	...	...	...	...	50	...	...	523	26
27	Tangier	...	254	...	...	29	...	...	23	1565	...	..	...	...	...	...	...	...	...	130	...	...	2,250	27
28	Pope's Harbour and Gerrard's Island	42	98	...	...	16	...	...	2	800	...	..	...	...	1	...	...	...	...	25	6	70	7,768	28
29	Spry Bay, Taylor's Head and Mushaboon	660	620	...	...	30	300	500	28	...	...	..	..	...	4	...	...	...	...	101	30	150	20,874	29
30	Sober Island and Sheet Harbour	...	368	...	...	41	...	...	40	150	...	..	...	...	...	...	.	...	...	30	8	120	13,531	30
31	Beaver Harbour and Salmon River	630	68	...	...	12	...	...	5	...	...	..	...	...	...	...	...	...	...	10	2	160	16,663	31
32	Quoddy, Harrigan Cove, and Mitchell Bay	640	73	...	...	7	...	...	2	...	...	..	...	..	300	...	...	...	...	20	3	400	39,409	32
	Totals	12197	17512	9	64300	2021	2564	3735	1994	45576	4860	1	25835	284	413	75950	30700	43	280	9506	1214	1295	....	
	Values $	60985	70048	90	1929	6063	5769	1867	3988	4557	486	10	1292	1136	4130	3798	1535	172	560	2851	1821	648	403,037	

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the

Number.	DISTRICTS.	BOATS.			FISHING MATERIALS.					KINDS OF FISH.				
					Gill-Nets.			Trawls.						
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.
	Pictou County.		$				$		$					
1	West Pictou	150	3000	140	60	1800	500	...	....	....	....	83800	2750	.
2	Pictou Island	65	1465	230	25	750	150	...	...	.....	95	....	...	14
3	Central Division	8	160	8	10	300	60	...	...	1600	50	....	....	21
4	Southern Division	27	541	43	58	2950	1630	33	146	7660	361	..	800	..
5	Merigomish Island	13	270	13	24	976	600	...	....	3600	....	13200	...	..
6	North Beach	7	110	7	15	1026	929	3	35	7000	....	16400	....	....
7	Ponds	16	400	19	36	2214	1809	3	35	10050	....	43000	1100	....
8	Lismore	4	44	5	4	630	640	...	....	2550	...	....	....	....
	Totals	290	5990	465	232	10646	6318	39	216	32460	506	156400	4650	35
	Values $	....	.....	....	..	.....	.. ..	...	....	6492	2024	1564	558	525

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.				
		Vessels.				Boats.			Gill-Nets.			Trawls.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Hants County.			$			$				$		$
1	Maitland to Shubenacadie	....	....	....	. .	16	130	16	19	520	130	...	..
2	Shubenacadie to Grand Lake	....	....	....	....	25	95	25	25	500	132	...	....
3	Noel to Maitland	....	....	....	....	....	....	....	....	....	....	....	..
4	West Hants	2	31	500	8	26	820	28	30	5300	1004	2	1
	Totals	2	31	500	8	67	1045	69	74	6320	1266	2	1
	Values $	....	....	....	....	....	.....	....	....	....	.. .	...	..

Quantity and Value of all Kinds of Fish, &c.—**Nova Scotia**—*Continued.*

KINDS OF FISH.														FISH PRODUCTS.				
Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Oysters, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish used as bait, brls.	Fish used as manure, brls.	TOTAL VALUE.	Number.
																	$	
252672	30	60	....	...	....	400	4300	....	2	20	.....	.....	.....	.. ..	800	300	53,797	1
172344	....	.....	..	....	....	.....	.....	....	....	.....	.....	.....	.....	.....	325	420	35,756	2
.....	...	10	5	60	...	600	5000	40	10	25	....	7	5	10	......	..	1,736	3
18240	....	90	....	..	...	200	4000	16	14	....	3500	....	....	....	....	40	7,699	4
18720	...	...	....	....	....	.....	....	....	...	....	.....	....	....	....	......	40	4,616	5
......	..	.....	...	55	....	.....	7000	...	52	....	.....	....	....	....	....	....	2,558	6
33840	135	..	....	150	100	300	.....	...	...	....	.....	...	...	65	......	80	10,492	7
.....	...	...	.. .	..	....	150	. . .	....	....	....	.....	....	....	.....	....	....	525	8
495816	165	160	5	265	100	1650	20300	56	78	45	3500	7	5	75	1125	880	....	
99163	825	640	15	597	50	165	1015	224	780	180	175	28	10	22	1687	440	117,179	

KINDS OF FISH.															
Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Cod, dried, cwt.	Haddock, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or gaspereaux, brls.	Bass, lbs.	TOTAL VALUE.	Number.
													$	
3400	....	.....	. .	... .	......	......	......	......	83	.....	33	......	1,642	1
2000	.....	.....	......	.....	....	......	.....	.....	9	......	20	... ..	570	2
200	.....	...	......	....	. ...	......	..	......	30	....	......	......	340	3
4270	172	8000	1900	200	30	45	440	8000	269	2800	53	700	6,596	4
9870	172	8000	1900	200	30	45	440	8000	391	2800	106	700	....	
1974	688	80	38	800	90	90	44	800	3910	140	424	70	9,148	

RECAPITULATION

Of the Value of Fishing Vessels, Boats, Nets, &c., used in District No. 2, **Nova Scotia,** for the Year 1897.

Material.	Value.	Total.
	$	$
96 vessels (2,153 tonnage)	46,122	
5,716 fishing boats	110,981	
32,126 gill-nets (818,462 fathoms)	167,351	
384 seines (37,860 fathoms)	21,715	
97 trap-nets	15,950	
22 weirs	3,395	
1,977 trawls	10,282	
7 4 smelt nets	1,729	
,083 hand-lines	3,910	381,435
110 lobster canneries	125,350	
243,825 lobster traps	144,140	269,490
44 freezers and ice-houses	19,290	
,521 smoke and fish-houses	69,281	
13 fishing piers and wharves	44,156	
6 tugs or smacks	31,475	164,202
Total value		815,127

Number of men engaged in the fisheries of District No. 2, **Nova Scotia**:—

Men in fishingg vessels	610
do do boats	6,961
Persons in lobster canneries	1,706
Total	9,277

COMPARATIVE STATEMENT of the Value of Fisheries in each County of District No. 2, **Nova Scotia**, for the Years 1896 and 1897.

County.	Value in 1896.	Value in 1897.	Increase.	Decrease.
	$	$	$	$
Antigonish	63,662	70,060	10,398	....
Colchester	20,172	27,203	7,031	....
Cumberland	88,184	120,820	32,636	....
Guysborough	646,116	713,527	67,411	....
Halifax	335,073	403,037	67,964	....
Hants	8,379	9,148	769	....
Pictou	83,877	117,179	33,302	....
	1,245,463	1,464,974	219,511	....

RECAPITULATION

OF the Yield and Value of the Fisheries in District No. 2, Province of **Nova Scotia** with Comparative Statements of the Increase or Decrease for the Years 1896, and 1897.

Kinds.		Quantity in 1897.	Rate.		Totals.	Quantities.	
						Increase.	Decrease.
			$	cts.	$		
Salmon, fresh	Lbs.	210,401	0	20	42,036	....	220
do preserved in cans	"	1,155	0	15	173	....	1,845
do smoked	"	3,492	0	20	698	....	143
Herring, salted	Brls.	34,920	4	00	139,680	8,292	....
do fresh	Lbs.	750,222	0	01	7,502	472,222	....
do smoked	"	31,900	0	02	638	6,300	....
Mackerel, fresh	"	1,606,691	0	12	192,802	287,774	....
do salted	Brls.	3,558	15	00	53,370	....	5,036
Lobsters, preserved in cans	Lbs.	2,686,440	0	20	537,288	....	97,798
do fresh, in shell	Cwt.	13,502	5	00	67,510	7,692	....
Cod, dried	"	39,241	4	00	156,964	....	3,816
do tongues and sounds	Brls.	19	10	00	190	4	....
Haddock, fresh	Lbs	1,915,150	0	03	57,454	1,915,150	....
do dried	Cwt.	11,968	3	00	35,904	....	11,639
do smoked finnan haddies	Lbs.	....	....	....	....	....	....
Hake, dried	Cwt.	5,989	2	25	13,475	1,133	....
do sounds	Lbs.	7,704	0	50	3,852	....	1,263
Pollock	Cwt.	4,519	2	00	9,038	176	....
Halibut	Lbs.	133,236	0	10	13,323	....	77,719
Trout	"	33,230	0	10	3,323	....	19,500
Shad	Brls.	1,382	10	00	13,820	292	....
Smelts	Lbs.	168,660	0	05	8,433	....	30,725
Alewives or gaspereaux	Brls.	2,793	4	00	11,172	....	2,006
Bass	Lbs.	12,240	0	10	1,224	8,820	....
Eels	Brls.	1,239	10	00	12,390	11	....
Oysters	"	1,262	4	00	5,048	366	....
Flounders	Lbs.	88,920	0	05	4,446	88,920	....
Tom cod or frost fish	"	41,130	0	05	2,056	34,390	....
Squid	Brls.	3,228	4	00	12,912	....	3,493
Coarse and mixed fish	"	405	2	00	810	85	....
Fish oil	Galls.	37,557	0	30	11,265	....	12,016
Fish as bait	Brls.	28,914	1	50	43,371	6,214	....
do manure	"	5,517	0	50	2,759	....	7,448
Seal skins	No.	50	1	00	50	29	....
Total for 1897		....	....	....	1,464,976	219,511	....

NOVA SCOTIA—

Return showing the Number, Tonnage and Value of Vessels and Boats
Province of **Nova Scotia,**

		FISHING VESSELS AND BOATS.							FISHING MATERIALS.										
		Vessels.				Boats.			Gill Nets.			Weirs.							
Number.	DISTRICTS.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Tongues & sounds, brls.
	Annapolis County.			$			$				$		$						
1	Margaretville	2	26	600	8	10	200	18	20	1000	500	1	300	2000	400	...	10	600	2
2	Port George	...	...	...	...	16	300	20	20	1000	500	2	600	4000	300	...	150	300	1
3	Port Lorne	...	...	...	...	20	400	40	30	2500	1000	...	...	...	500	...	250	600	3
4	Hampton	...	...	...	...	20	400	20	28	2000	800	...	...	...	600	...	225	525	3
5	Phinny's Cove	...	...	...	...	23	460	35	50	2500	1000	...	...	...	520	.	240	500	2
6	Parker's Cove	...	...	...	...	30	600	50	50	2500	1000	...	...	...	400	...	250	400	3
7	Hilsburn and Delap	1	40	800	8	20	500	40	60	2800	1400	...	...	...	350	...	230	500	4
8	Victoria Beach	3	150	2400	40	30	600	50	55	3000	1500	...	...	...	75	..	180	3050	8
9	Thorne's Cove	3	150	2800	30	10	200	16	20	1000	500	2	400	...	...	...	18	...	...
10	Clementsport	2	26	700	8	13	300	26	12	600	250	6	1000	...	30	3000	...	300	1
11	Annapolis to line	...	...	...	...	...	...	...	50	500	600	3	200	400	...	...	...	...	...
12	Lequille River	...	...	...	...	...	...	...	...	...	...	1	50	500	...	...	...	...	...
13	Roundhill	...	...	...	...	...	...	...	...	...	...	...	...	400	...	...	...	...	...
14	Inland Lakes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Totals	11	392	7300	94	192	3960	315	395	19400	9050	15	2550	7300	3175	3000	1553	6775	27
	Values $	...	...	...	...	...	...	...	...	...	...	...	...	1460	12700	60	7765	27100	270

District No. 3.

and the Quantity and Value of all Fish, &c., in the District No. 3, for the Year 1897.

KINDS OF FISH.													FISH PRODUCTS.			TOTAL VALUE.		
Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Pollock, cwt.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Bass, lbs.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	$	cts.	Number.
1000	112	120	100	95	....	....	....	....	..	....	....	....	175	20	100	5,478	50	1
1500	150	125	75	50	....	....	....	....	..	....	....	....	100	30	75	4,986	25	2
2000	200	250	100	100	....	....	....	....	..	....	....	....	200	40	60	7,302	50	3
1000	700	500	200	200	....	....	....	....	..	....	....	....	250	50	30	9,575	00	4
900	1000	1000	500	250	....	....	....	....	..	....	....	....	300	60	25	11,519	50	5
1000	1200	1200	660	300	....	....	....	....	..	....	....	....	400	40	30	11,905	00	6
800	1000	1500	700	400	....	....	....	....	..	....	....	....	500	50	....	12,364	00	7
3000	3000	4000	3000	2500	....	....	....	....	..	....	....	....	1000	1200	20	40,180	00	8
....	90	400	100	90	....	....	....	....	..	....	....	....	....	25	20	1,537	50	9
....	900	500	300	100	..	....	....	....	..	....	....	....	200	200	90	5,970	00	10
....	....	....	....	....	400	....	....	200	3	....	....	....	....	....	....	170	00	11
....	....	....	....	....	900	50	1500	1000	..	1000	1200	2000	....	....	....	4,975	00	12
....	....	....	....	....	600	....	....	150	4	....	....	....	....	....	....	195	00	13
....	....	....	....	....	9000	....	....	....	..	....	....	....	....	....	....	900	00	14
11200	8352	9595	5675	4085	10900	50	1500	1350	7	1000	1200	2000	3125	1715	450	.....	....	
336	25056	21588	2837	8170	1090	500	75	135	70	50	60	4000	937	2572	225	117,058	25	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia.**—*Con.*

		Fishing Vessels and Boats.							Fishing Materials.								Kinds of Fish.							
		Vessels.				Boats.			Gill Nets.			Seines.			Weirs.									
Number.	Districts.	Number	Tonnage	Value.	Men.	Number	Value.	Men.	Number	Fathoms	Value.	Number	Fath'ms	Value.	Number	Value.	Salmon, fresh, lbs.	Herring, salted, lbs.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Lobst'rs, preserved in cans, lbs.	Lobsters, fresh, in shell, lbs.	Number.
	Digby County.			$			$				$			$		$								
1	Digby	12	622	16300	144	8	240	16	16	320	48	4	760	1800	2	200		100	10000	1500	400	4848	2070	1
2	Bay View					11	330	22	22	4000	110	2	120	300					8700				209	2
3	Broad Cove					13	390	26	26	550	130								19500				150	3
4	Rossway					6	180	12	12	240	36				2	200		50	5000		2000			4
5	Gulliver's Cove					15	450	30	30	600	150						400		13800				200	5
6	Waterford					4	120	8	8	160	24	1	60	100	1	200		10	20200				100	6
7	Centreville	1	25	600	8	18	720	36	30	600	90						250		10000			6000	768	7
8	Sandy Cove					6	180	12	10	200	30	1	125	100			750		510				21	8
9	Mink Cove					7	280	14	14	280	42	2	210	250				40	1600		600		69	9
10	White Cove					3	90	6	6	120	36												20	10
11	Little River					22	880	44	66	1320	396	3	320	275					8000				340	11
12	Long Beach					3	90	6	6	120	18	1	100	75					70000				320	12
13	Whale Cove					6	240	12	18	240	108								7000				96	13
14	East Ferry					11	440	22	22	410	66								4000				35	14
15	Tiverton	6	115	4000	48	38	1900	76	114	2280	680	3	250	800					6000				1050	15
16	Central Grove					6	240	12	18	360	108								300				64	16
17	Freeport	9	300	8400	75	50	2000	100	150	3000	900	5	300	1000					1000				1160	17
18	Westport	18	535	14800	144	27	1350	54	81	1620	480	11	600	2525					10000				1270	18
19	Smith's Cove	2	33	800	7	1	30	2	1	20	5				7	700		100	20000	24000	600		10	19
20	Brighton					6	120	2	12	500	250				5	500		200	10000				6	20
21	Plympton					4	80	7	5	400	200				1	75		50	6000				7	21
22	Doty's Landing					3	60	6	3	60	12							6	8000				6	22
23	Weymouth					3	60	6	7	300	56				2	400		40	5000				20	23
24	New Edinburg					8	240	16	16	320	80							20	5000				30	24
25	Comeauville					6	150																13440	25
26	Salmon River					2	50																2240	26
27	Cape St. Mary's	1	16	700	6	23	275	36	28	840	196												20160	27
28	Bear Cove	2	20	450	9	10	250	5	7	210	49												11760	28
29	Meteghan	1	7	350	4	27	675	18	6	180	42							100				16224	35500	29
30	Little Brook					3	75																3080	30
31	Church Point	1	31	1500	9	15	375	28	6	180	42							50					6860	31
32	Belliveau Cove					6	150	12																32
33	New Edinburg					11	275	4															12460	33
	Totals	53	1704	47900	454	382	13285	650	740	19460	4384	33	2845	7225	20	2275	1400	760	249610	25500	3600	27072	113521	
	Values $																280	3064	2496	510	432	5414	567605	

RETURN showing the Kinds, Quantities and Value of Fish, &c.—Nova Scotia—*Continued.*

		KINDS OF FISH.																FISH PRODUCTS.					
Number.	DISTRICTS.	Cod, dried, cwt.	Cod tongues & sounds, brls	Haddock, fresh, lbs.	Haddock, dried, cwt.	Haddock, smoked fin. Haddies, lbs.	Hake, dried, cwt.	Hake sounds, lbs.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives, brls.	Eels, brls.	Flounders, lbs.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	TOTAL VALUE.		Number.
	Digby County.																				$	cts.	
1	Digby	4800	5	20000	1550	812800	12000	8500	326	185450	500	6	1000	....	....	1000	8000	3500	2300	2000	157322	60	1
2	Bay View	184	2	2000	81	......	311	700	65	200	....	....	....	....	....	500	200	350	400	100	4570	75	2
3	Broad Cove	140	3	3000	265	......	415	1050	94	810	....	....	....	....	....	75	500	450	100	150	5511	50	3
4	Rossway	124	....	300	202	....	386	....	46	1200	....	10	....	....	10	......	100	200	40	100	3251	50	4
5	Gulliver's Cove	406	3	1000	665	5000	1465	750	146	2950	200	95	....	....	....	300	500	500	175	500	12102	75	5
6	Waterford	35	½	.....	275	......	375	200	8	200	....	15	....	....	....	...	100	120	20	100	3157	75	6
7	Centreville	1356	4	....	570	100000	1003	1500	1059	11237	....	20	....	....	....	500	700	2000	480	600	27857	45	7
8	Sandy Cove	50	....	.....	35	......	200	150	20	200	....	3	....	....	....	...	200	300	15	100	1742	60	8
9	Mink Cove	179	2	......	437	......	637	1000	81	700	....	15	....	....	....	200	600	1000	70	300	6720	25	9
10	White Cove	10	½	......	175	.....	20	250	50	400	....	....	....	....	....	20	30	150	25	50	1148	50	10
11	Little River	286	5	2000	600	......	1550	4500	160	875	....	....	....	....	....	200	2000	1600	300	1500	16669	00	11
12	Long Beach	73	....	500	140	......	250	.....	27	1300	....	....	....	....	....	100	200	.....	15	50	4226	00	12
13	Whale Cove	240	3	......	584	......	800	2500	5400	1200	....	....	....	....	....	200	700	2000	240	2000	20632	00	13
14	East Ferry	142	1½	2000	675	....	897	600	59	1150	....	....	....	....	....	50	200	500	440	100	6696	75	14
15	Tiverton	2550	8	22800	5000	.....	3769	9500	730	3574	25	20	....	....	....	500	4000	5600	2280	1600	60449	15	15
16	Central Grove	240	5	.....	360	......	565	750	92	200	....	....	....	....	....	100	200	400	150	300	5163	25	16
17	Freeport	8293	12	42000	13000*	......	35200	3000	823	32397	....	30	....	....	....	500	3000	10700	3640	2000	180942	70	17
18	Westport	10000	14	45000	8520	......	10900	2100	4475	45739	....	68	....	....	....	500	3000	17000	4350	2000	131928	90	18
19	Smith's Cove	110	½	18000	......	......	71	200	150	700	...	5	...	20	....	......	200	.....	300	200	3896	75	19
20	Brighton	.....	....	500	......	......	.....	....	.....	.....	....	600	2000	20	40	50	50	.....	150	100	7902	50	20
21	Plympton	.....	....	1000	......	......	.....	....	.....	.....	....	225	....	5	20	10	10	.....	75	50	2953	00	21
22	Doty's Landing	..	....	1050	......	......	.....	....	.....	.....	....	120	....	....	....	......	10	150	200	50	1755	50	22
23	Weymouth	.....	....	1000	......	......	.....	....	.....	.....	100	130	....	....	....	......	.....	.....	50	10	1730	00	23
24	New Edinburg	.....	....	4000	......	......	.....	....	.....	.....	....	110	....	....	....	......	20	400	200	40	1980	00	24
25	Comeauville	....	....	......	......	......	.....	....	.....	.....	....	....	....	....	....	......	.....	.....	.....	....	67200	00	25
26	Salmon River	.....	..	......	......	......	.....	....	.....	.....	....	....	....	....	....	......	.....	.....	.....	....	11200	00	26
27	Cape St. Mary's	60600	....	......	46400	......	.....	....	23200	.....	....	....	....	....	....	......	.....	.....	.....	....	528800	00	27
28	Bear Cove	41900	....	......	8100	......	.....	....	8300	.....	....	....	....	....	....	......	.....	.....	.....	....	267300	00	28
29	Meteghan	17500	..	......	14000	......	.....	....	3500	.....	....	....	....	....	....	......	.....	.....	.....	....	300144	80	29
30	Litt'e Brook	.....	....	......	......	......	.....	....	.....	.....	....	....	....	....	....	......	.....	.....	.....	....	15400	00	30
31	Church Point	28600	....	......	18300	......	1500	....	90000	.....	....	....	....	....	....	......	.....	.....	.....	....	387175	00	31
32	Belliveau Cove	25200	....	......	28800	......	.....	....	.....	.....	....	....	....	....	....	......	.....	.....	.....	....	187200	00	32
33	New Edinburg	4200	....	......	4800	......	.....	....	.....	.....	....	....	....	....	....	......	.....	.....	.....	....	93500	00	33
	Totals	207218	69	166150	153534	917800	72314	37250	138811	290482	825	1472	3000	45	70	4805	24520	46920	16015	14000	....	....	
	Values	$ 828872	690	4984	460602	55068	162706	18625	277622	29042	82	14721	150	180	700	2401	49040	14076	24022	7000	2528230	95	

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.							
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.
	King's County.			$			$				$			$		$
1	Starr's Flats														3	500
2	Kingsport														1	500
3	Medford															
4	Blomidon														2	200
5	Baxter's Harbour	1	15	500	3	15	300	30		450	225				8	1600
6	Hall's Harbour					20	400	40		600	300				7	1400
7	Huntingdon Point					2	40	4		60	30				1	200
8	Chipman's Brook					3	60	6		90	45				2	400
9	Black Rock					7	140	14		210	105				2	400
10	Harbourville	1	19	500	3	1	20	2		30	15				6	1200
11	Morden					1	20	2		30	15				3	500
12	Scott's Bay					9	180	18		270	135				3	750
13	Avonport					15	225	15		1750	725					
14	Boot Island											1	750	400		
15	Little Island											1	500	275		
16	Long Island											1	500	250		
17	Gaspereaux															
	Totals	2	34	1000	6	73	1385	131		3490	1595	3	1750	925	38	7650
	Values $															

the Quantity and Value of all Fish, &c.—**Nova Scotia**—*Continued.*

Kinds of Fish.													Fish Products.			Total Value.	Number.
Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Haddock, dried, cwt.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Shad, brls.	Alewives or gaspereaux, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
																$ cts.	
....	....	....	....	....	....	....	....	....	....	....	145	....	....	....	40	1,470 00	1
....	....	....	....	....	....	....	....	....	300	....	....	....	....	....	20	40 00	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	....	....	....	....	....	....	....	....	100	....	....	....	....	....	30	25 00	4
10000	150	10000	....	....	150	15	....	225	750	....	....	....	....	100	75	4,157 50	5
8000	250	....	3	....	225	300	25	100	1000	....	15	....	200	150	150	5,311 25	6
1000	100	....	....	....	100	50	....	25	75	....	....	....	....	25	40	1,265 00	7
750	90	....	....	....	150	30	....	15	100	....	....	....	....	30	50	1,310 00	8
1000	150	....	....	....	175	40	....	12	150	....	....	....	....	75	95	1,819 00	9
400	100	....	....	....	40	25	....	30	200	....	....	....	....	10	60	840 00	10
500	50	....	....	....	60	10	....	10	250	....	....	....	....	12	40	653 00	11
....	800	8000	....	20	135	180	....	40	500	....	600		....	90	190	10,900 00	12
100	....	....	....	....	....	....	....	....	....	....	....	550	....	....	....	2,220 00	13
100	....	....	....	....	....	....	....	....	....	....	87	....	....	....	....	890 00	14
....	....	....	....	....	....	....	....	....	....	....	20	....	....	....	....	200 00	15
200	....	....	....	....	....	....	....	....	....	....	25	....	....	....	....	290 00	16
1000	....	....	....	....	....	....	....	....	....	1200	....	220	....	....	....	1,200 00	17
23050	1690	18000	3	20	1035	650	25	457	3425	1200	892	770	200	492	790	....	
4610	6760	360	45	100	4140	1950	56	914	342	120	8920	3080	60	738	395	32,590 75	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.								KINDS OF FISH.								Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Salmon, fresh, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.									
	Lunenburg County.			$			$				$			$		$									
1	Chester	....	..	...	....	130	3000	130	....	20000	4000	20	10000	5500	20	8000	7000	600	500	1000	800	...	10	48480	1
2	Mahone Bay and Martin's River	20	1550	57000	300	200	3600	85	....	17000	2450	8	5000	1550	3	1200	4000	....	50	1500	....	...	10	.. ..	2
3	Fox Point	....	...	...	....	75	1400	80	....	28000	1800	16	11000	4500	15	5500	200	....	10	.....	...	3600	10	.. .. ..	3
4	Mill Cove	....	....	...	....	75	1000	80	....	22000	1700	16	11000	4000	8	5500	800	....	8	200	....	....	....	......	4
5	The Lodge	....	....	....	....	28	700	30	....	20000	1200	13	7000	3000	3	1100	300	....	....	.. .	....	....	....	.. . .	5
6	North-west Cove	....	..	....	....	55	1600	55	...	28000	1700	15	10000	6000	....	.....	300	....	....	....	....	....	....	....	6
7	Aspotogan	....	......	.....	....	20	700	30	....	13000	1000	11	7000	3000	2	800	200	....	20	.....	....	....	....	44160	7
8	Bayswater	....	....	..	....	50	1000	50	....	20000	1500	12	7000	3000	1	400	500	....	50	.....	....	....	....	.. .. ..	8
9	Blandford	...	....	.....	....	100	2000	100	....	70000	4500	20	12000	5500	9	3500	40	....	100	.....	....	....	....	.. ....	9
10	Big Tancook	...	. .	...	....	40	2000	40	....	50000	3000	10	5000	3000	2	800	300	...	400	....	....	....	15	....	10
11	Little Tancook	...	.. .	.....	....	190	8000	200	....	140000	11500	35	27000	10500	2	800	600	....	20	.....	....	....	10	....	11
12	Deep Cove	....	....	.. ..	....	20	400	30	....	15000	800	8	5025	900	.. .	....	.....	....	....	....	....	....	....	....	12
13	Lunenburg Harb., Upper and Lower South Kingsbury, Black and Blue Rocks, Back Harb., and Cross Island	70	5909	236360	1121	577	14402	131	2598	51960	25980	15	1500	3750	3	900	65	600	87	800	....	400	36	41696	13
14	La Have River, East and West Side, Ritcey's Cove, Middle La Have to New Dublin	61	4983	198520	926	578	13912	138	2280	45600	22800	5	500	1250	16	4000	5256	100	457	10000	....	600	91	2448	14
15	Petite Rivière, Vogler's Cove, Broad Cove to County Line	7	457	18040	93	150	5860	96	1300	26000	13000	4	400	1000	7	1750	1350	....	509	4000	....	1200	85	......	15
	Totals	158	12899	509920	2440	2288	59574	1275	6178	566560	96930	208	119425	56450	91	34250	20911	1300	2211	17500	800	5800	267	136784	
	Values ....$	....	....	.....	.. .	....	.	...	...	... .	.....	...	.....	.. .	....	....	4182	260	8844	175	16	696	4005	27357	

RETURN showing the Kinds, Quantities and Value of Fish, &c.—**Nova Scotia**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.															FISH PRODUCTS.			TOTAL VALUE.	Number.
		Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, dried, cwt.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Lunenburg County.																			$ cts.	
1	Chester	....	1400	...	60	60	200	1200	1300	5000	140	35	16000	1000	80	120	400	200	40	22,967 00	1
2	Mahone Bay and Martin's Riv.	....	50000	80	500	300	70	34000	250	3000	15	25	6000	500	40	80	11000	1600	....	214,510 00	2
3	Fox Point	.....	400	....	70	130	400	1200	600	500	4	9	6000	160	40	125	700	150	40	5,048 50	3
4	Mill Cove	....	300	....	50	70	200	......	125	.....	..	7	2000	.....	25	40	120	40	30	2,575 00	4
5	The Lodge	....	400	....	20	50	30	300	.....	.....	4	....	1000	....	10	10	150	50	15	2,176 00	5
6	North-west Cove	.....	400	2	60	80	70	400	....	....	6	3	1500	.....	15	15	150	40	25	2,556 50	6
7	Aspotogan	.....	300	....	60	10	50	220	.....	.....	...	5	1200	.....	15	10	130	30	12	10,676 50	7
8	Bayswater	......	220	....	10	60	70	300	..	.....	5	6	1200	.	4	12	140	40	7	1,680 50	8
9	Blandford	......	3200	....	50	.....	300	400	......	.....	5	16	2000	200	14	110	900	70	60	14,769 00	9
10	Big Tancook	..	1100	....	200	40	70	1000	......	.....	....	...	1000	......	...	20	225	35	30	6,165 00	10
11	Little Tancook	...	900	4	125	30	140	1200	......	.....	....	....	2000	700	10	60	425	50	225	7,037 50	11
12	Deep Cove	......	700	2	122	30	130	1000	.....	.....	...	15	1500	100	20	....	40	10	12	4,036 50	12
13	Lunenburg Harbour, Upper and Lower South Kingsbury, Black and Blue Rocks, Back Harbour, to Cross Island	950	90267	69	1364	66	239	134000	150	500	....	25	250	325	....	....	28600	15	...	402,843 95	13
14	La Have River, East and West Side, Ritcey's Cove, Middle La Have to New Dublin	525	87132	60	979	5	686	42500	350	10000	45	25	250	956	....	....	36580	20	.....	377,378 35	14
15	Petite Rivière, Vogler's Cove, Broad Cove to County Line.	10000	13617	3	114	......	59	.....	50	800	10	5	25	325	....	...	2555	10	.....	109,677 00	16
	Totals	11475	250336	220	3784	931	2714	217720	2825	19800	234	176	41925	4266	273	602	82115	2360	496	....	
	Values $	57375	1001344	2200	11352	2094	5428	21772	282	990	936	1760	2096	213	1092	1204	24634	3540	248	1,184,097 30	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.								Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	
	Queen's County.			$			$				$			$		$	
1	Liverpool, Brooklyn and Gulls Island	4	202	7550	44	70	1243	75	308	5547	2156	3	330	660			1
2	Western Head, Moose Harbour and Black Point					48	818	58	296	5330	2072	3	340	800			2
3	White Point, Hunt's Point, and Summerville	1	10	450	4	47	757	50	176	3178	1232						3
4	Port Joli and Port L'Hébert	1	13	450	4	45	928	43	72	1288	508						4
5	Port Mouton					102	1811	89	261	4698	1827				1	500	5
6	Eagle Head and Beach Meadows					30	626	34	73	1314	511						6
7	West and East Berlin					38	615	38	125	2257	875						7
8	Port Medway	2	75	2150	19	45	883	46	153	2744	1064						8
9	Milton					8	96	12	8	120	56						9
10	Mill Village					20	200	40	38	426	230						10
11	Greenfield					20	105	20									11
	Totals	8	300	10600	71	460	8082	505	1510	26902	10531	6	670	1460	1	500	

RETURN showing the Kinds, Quantities and Value of Fish, &c.—Nova Scotia—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.													FISH PRODUCTS.		TOTAL VALUE.	Number.
		Salmon, fresh, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Haddock, dried, cwt.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Alewives or gaspereaux, brls.	Fish oil, galls.	Fish as bait, brls.	$ cts.	
	Queen's County.																	
1	Liverpool, Brooklyn and Gulls Island	3080		491	5			4349	87	28	22	1145	800	15	1578	59	21,235 40	1
2	Western Head, Moose Harbour & Black Pt.			398	12			418	54		25	913			246	8	3,833 10	2
3	White Point, Hunt's Point and Summerville			428	4	19104		560	114		24	1200			140	10	8,399 80	3
4	Port Joli and Port L'Hébert			210		960		388	25		2	100		15	91	10	2,775 30	4
5	Port Mouton			1365	5	57504	4018	830	54		26	440			255	20	40,810 30	5
6	Eagle Head and Beach Meadows			49	1	43200		142	23		5				20		9,504 00	6
7	West and East Berlin			76		19200		81	2		2						4,478 00	7
8	Port Medway	3350	150	389	1			932	96		5	2000		114	262	10	7,046 60	8
9	Milton	3250											1000	30			870 00	9
10	Mill Village	1500	100											174			1,016 00	10
11	Greenfield	1120	200											200			1,064 00	11
	Totals	12300	450	3406	28	139968	4018	7700	455	28	111	5798	1800	548	2592	117	....	
	Values $	2460	90	13624	420	27994	20090	30800	1365	63	222	579	180	2192	777	175	101,032 50	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.		KINDS OF FISH.							Number.
		Vessels.				Boats.			Gill Nets.									
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	
	Shelburne County.			$			$			$								
1	North-east Harbour	2	39	1370	10	14	1200	30	6450	1060	1000	1208	....	....	....	1600	500	1
2	Black Point, Red Head and Round Bay	1	18	600	6	52	3000	115	16000	2600	....	1800	....	5	....	1000	800	2
3	Roseway and McNutt's Island	....	....	....	....	55	3800	120	15900	2500	....	1300	....	5	....	800	300	3
4	Gunning Cove, Churchover and Birchtown	1	13	300	6	50	1800	100	8300	1385	300	1800	....	1	....	500	400	4
5	Shelburne and Sand Point	8	395	14000	90	55	1450	110	19500	3300	600	1600	....	115	480	400	8500	5
6	Jordan	1	95	3200	19	48	1480	70	12500	2080	1200	1250	....	....	....	360	3800	6
7	Lockeport	23	1250	45000	225	180	2700	360	24000	4320	100	3000	....	3	51648	4300	34600	7
8	Barrington	3	85	4000	25	60	1600	66	14000	1300	325	330	....	....	....	1800	2500	8
9	Wood's Harbour	5	123	4200	46	150	3000	145	19000	1850	....	1700	30000	....	87642	13000	800	9
10	Shag Harbour	3	52	1350	26	80	1600	55	17000	1400	....	2500	2500	....	....	1720	1000	10
11	Bear Point	1	20	500	6	25	625	30	1000	950	....	300	....	....	....	1000	300	11
12	Cape Island	25	500	28000	256	450	9000	600	60000	7000	....	11000	100000	....	137568	17000	10000	12
13	Port La Tour and Baccaro	2	100	3000	20	285	4000	150	52000	6700	....	6000	....	....	....	4500	2200	13
14	Upper La Tour	3	50	1200	18	40	500	40	15500	600	....	800	....	....	....	1260	400	14
15	Cape Negro and Blanche	2	40	1000	15	85	1100	80	13000	1000	....	2000	1000	15	16608	6200	300	15
16	Cape Negro Island	....	....	....	....	65	1400	62	16600	1150	....	2750	1000	10	....	4400	400	16
17	Port Clyde	....	....	....	....	7	75	7	600	30	3300	75	....	....	26784	....	....	17
	Totals	80	2780	107720	768	1701	38330	2140	311350	39425	6825	39413	134500	154	320730	60040	66800	
	Values $	....	....	....	....	....	....	....	....	....	1365	157652	16140	2310	64146	300200	267200	

RETURN showing the Quantity and Value of all kinds of Fish, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.												FISH PRODUCTS.		TOTAL VALUE.		Number.
		Cod tongues and sounds, brls.	Haddock, dried, cwt.	Haddock, smoked finnan haddies, lbs.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Tom cod or frost fish, lbs.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.			
	Shelburne County.															$	cts.	
1	North-east Harbour	...	38	...	...	10	...	...	...	50	3	...	...	240	25	15,505	50	1
2	Black Point, Red Head and Round Bay	...	330	...	...	50	1000	...	...	100	2	...	...	500	100	17,385	00	2
3	Roseway and MacNutt's Island	...	400	...	...	65	500	...	...	25	5	...	...	200	50	12,140	00	3
4	Gunning Cove, Churchover and Birchton	...	300	...	...	80	...	...	...	40	3	...	...	220	55	12,773	50	4
5	Shelburne and Sand Point	...	275	300	...	100	500	5500	700	175	6	500	...	3000	100	47,854	00	5
6	Jordan	...	130	500	...	28	200	2000	6500	60	5	500	...	1500	40	24,146	00	6
7	Lockeport	10	1300	400	1000	450	9000	1500	...	10	10	400	5	14000	250	196,263	60	7
8	Barrington	...	1500	...	...	150	600	600	...	650	35	200	...	1000	2100	31,715	00	8
9	Wood's Harbour	...	200	...	...	100	900	...	...	...	...	...	...	200	6000	106,078	40	9
10	Shag Harbour	...	650	...	...	275	2000	300	...	40	...	...	...	400	700	26,960	00	10
11	Bear Point	...	100	...	...	90	800	...	...	...	...	...	...	75	600	8,882	50	11
12	Cape Island	...	4500	...	...	500	120000	...	...	...	...	...	...	6000	8500	249,563	60	12
13	Port La Tour aud Baccaro	...	900	...	...	2500	2000	...	...	200	60	...	...	...	...	68,020	00	13
14	Upper La Tour	...	200	...	...	350	1200	...	...	...	...	...	...	4400	1400	13,390	00	14
15	Cape Negro and Blanche	...	600	...	...	200	1000	...	...	...	...	...	...	400	500	47,006	60	15
16	Cape Negro Island	...	350	...	...	250	2600	...	...	...	...	...	...	300	500	38,570	00	16
17	Port Clyde	...	...	...	...	...	...	700	...	400	...	...	...	1800	900	7,986	80	17
	Totals	10	11773	1200	1000	5198	142300	10600	7200	1750	129	1600	5	34235	21820	...		
	Values $	100	35319	72	2250	10396	14230	1060	360	7000	1290	80	10	10270	32730	924,180	50	

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Nova Scotia**—*Con.*

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.					Kinds of Fish.						
		Vessels				Boats.			Gill Nets.			Trap Nets.								
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.
	Yarmouth County.			$			$				$		$							
1	Yarmouth	17	892	22750	229	102	2020	202	404	12120	3232	2	9000	750	250	435800	....	84700	95184	3012
2	Port Maitland	2	26	1800	12	64	3302	122	50	1000	800	1	2500	....	1500	500000	1700	90000	....	....
3	Sandford	....	....	....	....	20	400	40	200	4000	2000	2	6000	1500	6000	....	....	219750	....	....
4	Arcadia	....	....	....	....	50	500	100	60	1200	450	.	....	....	1000	....	....	....	....	....
5	West Pubnico	14	662	17212	168	53	600	20	160	3200	800	1	2500	....	....	476800	....	....	70128	2100
6	East do	4	131	3400	30	17	175	34	68	1360	340	....	....	....	2000	....	....	....	125908	5010
7	Tusket Wedge	7	345	9600	79	45	500	90	180	3600	900	1	800	75	250	....	....	1000	237816	15300
8	Tusket	....	....	....	....	560	2800	560	1800	38000	88000	....	....	1000	....	....	....	....	....	....
9	Eel Brook	....	....	....	....	50	350	100	150	3000	500	....	....	....	....	....	....	....	....	....
10	Salmon River	....	....	....	....	20	150	20	100	2000	500	....	....	500	....	....	....	....	....	....
	Totals	44	2056	54762	518	981	10797	1288	3172	69480	97522	7	20800	3825	11000	1412600	1700	395450	529036	25422
	Values	....	....	....	....	....	....	....	....	....	....	....	....	765	4400	14126	34	47454	105,807	127110

RETURN showing the Quantity and Value of all kinds of Fish, &c.—**Nova Scotia**—*Con.*

Number.	DISTRICT.	KINDS OF FISH.															FISH PRODUCTS.			TOTAL VALUE.		Number.
		Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Haddock, smoked finnan haddies, lbs.	Hake, dried, cwt.	Pollock, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish used as bait, brls.	Fish as manure, brls.	$	cts.	
	Yarmouth County.																					
1	Yarmouth	18725	...	284900	...	20000	...	2401	7500	...	18000	...	...	...	...	...	3650	1125	250	143,775	30	1
2	Port Maitland	9872	5	145000	...	10000	...	7800	10000	...	...	...	2	...	14	666	1500	...	1000	85,280	00	2
3	Sandford	200	...	1000	...	...	...	160	3200	...	...	...	...	...	...	...	...	...	250	52,265	00	3
4	Arcadia	1000	...	...	250	...	...	6	...	...	3000	...	60	...	...	...	...	150	...	9,737	00	4
5	West Pubnico	12980	...	222100	...	...	...	1397	4000	...	...	...	...	...	140	...	1800	560	...	93,010	60	5
6	East do	1350	...	4200	...	...	...	1500	800	...	...	...	...	...	...	...	...	20	...	66,867	60	6
7	Tusket Wedge	4000	5	...	5000	...	5000	3500	...	...	...	2	...	100	70	15000	800	300	...	205,481	20	7
8	Tusket	...	...	...	...	...	...	...	...	2000	...	3700	75	60000	...	...	...	500	...	19,700	00	8
9	Eel Brook	...	...	...	...	...	...	...	...	...	...	400	200	...	...	...	...	...	...	3,600	00	9
10	Salmon River	...	...	...	...	...	...	...	...	...	...	500	25	...	...	...	...	...	...	2,350	00	10
	Totals	48127	10	657200	5250	30000	5000	16764	25500	2000	21000	4602	362	60100	224	15666	7750	2655	1500	....		
	Values	192508	100	19716	15750	1800	11250	33528	2550	200	1050	18408	3620	3005	896	31332	2325	3982	750	682,066	70	

RECAPITULATION

OF the Yield and Value of the Fisheries of the District No. 3, Province of **Nova Scotia,** for the Year 1897.

Kinds of Fish.		Quantities.	Rate.	Value.	Total.
			$ cts.	$ cts.	$ cts.
Salmon, fresh	Lbs.	75,611	0 20	15,122 20	
do smoked	"	1,750	0 20	350 00	15,472 20
Herring, salted	Brls.	61,661	4 00	246,644 00	
do fresh	Lbs.	1,679,710	0 01	16,797 10	
do smoked	"	49,000	0 02	980 00	264,421 10
Mackerel, fresh	"	539,350	0 12	64,722 00	
do salted	Brls.	452	15 00	6,780 00	71,502 00
Lobsters, canned	Lbs.	1,153,590	0 20	230,718 00	
do fresh, in shell	Cwt.	216,049	5 00	1,080,245 00	1,310,963 00
Cod, dried	Cwt.	587,991	4 00	2,351,964 00	
do tongues and sounds	Brls.	336	10 00	3,360 00	2,355,324 00
Haddock, fresh	Lbs.	834,550	0 03	25,036 50	
do dried	Cwt.	183,798	3 00	551,394 00	
do (finnan haddies)	Lbs.	949,000	0 06	56,940 00	633,370 50
Hake, dried	Cwt.	88,893	2 25	200,009 25	
do sounds	Lbs.	42,925	0 50	21,462 50	221,471 75
Pollock	Cwt.	168,140	2 00		336,280 00
Halibut	Lbs.	685,225	0 10		68,522 50
Trout	"	30,150	0 10		3,015 00
Shad	Brls.	2,414	10 00		24,140 00
Smelts	Lbs.	52,500	0 05		2,625 00
Alewives or gaspereaux	Brls.	7,949	4 00		31,796 00
Bass	Lbs.	1,350	0 10		135 00
Eels	Brls.	744	10 00		7,440 00
Flounders	Lbs.	47,730	0 05		2,386 50
Tom cod or frost fish	"	67,166	0 05		3,358 30
Squid	Brls.	497	4 00		1,988 00
Coarse or mixed fish	"	42.723	2 00		85,586 00
Fish oil	Galls.	176,937	0 30		53,081 10
Fish as bait	Brls.	45,174	1 50		67,761 00
Fish as manure	"	17,236	0 50		8,618 00
Total for 1897					5,569,256 95
do 1896					3,781,884 71
Increase					1,787,372 14

RECAPITULATION

Of the Value of Fishing Vessels, Boats, Nets, &c., used in **District No. 3, Nova Scotia**, with an Estimate of other Fishing Material or Fixtures not included in Returns, 1897.

Material.		Value.	Total.
		$	$
356	vessels (20,165 tonnage)	739,202	
6,077	fishing boats	135,413	
19,790	gill nets (1,016,642 fathoms)	259,437	
250	seines (124,690 fathoms)	66,060	
424	trap nets	74,663	
3,929	trawls	63,061	
182	weirs	13,320	
24	smelt nets	685	
9,889	hand-lines	12,009	1,363,850
37	lobster canneries	29,140	
171,668	do traps	216,611	245,751
105	freezers and ice-houses	14,510	
1,298	smoke or fish-houses	77,858	
34	fishing smacks	43,220	
447	do piers and wharfs	91,196	226,784
	Total	....	1,836,385

Number of men employed in the Fisheries of **District No. 3, Nova Scotia.**

Men in fishing vessels	4,351
do boats	6,304
Persons in lobster canneries	1,376
Total	12,031

RECAPITULATION

SHOWING the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of Fishing Materials used in the Fishing Industry in the whole Province of **Nova Scotia,** for the Year 1897.

Number.	COUNTIES.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.												Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.		Weirs.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
				$			$				$			$		$		$		$	
1	Cape Breton	12	196	4,300	65	624	13,151	1,251	2,650	56,974	23,158	3	300	500	....	......	298	1,457	..	..	1
2	Inverness	25	539	9,975	130	790	20,817	1,701	2,431	64,440	19,141	3	525	600	1	700	531	3,018	31	279	2
3	Richmond	56	1,624	19,550	358	1,405	24,385	2,277	9,434	200,900	56,565	....	.. ....	....	....	....	545	1,984	....	....	3
4	Victoria	....	....	......	......	856	14,976	1,365	2,146	49,100	18,507	2	200	75	2	1,000	501	2,821	....	......	4
5	Antigonish	3	51	675	9	251	3,730	294	595	19,904	8,721	...	....	....	....	...	131	495	....	......	5
6	Colchester	....	....	....	....	135	2,195	279	232	22,215	4,670	....	....	......	....	.....	8	278	12	2,850	6
7	Cumberland	1	15	300	3	228	6,291	279	324	6,230	1,994	...	....	......	....	.....	9	122	3	90	7
8	Guysborough	25	502	12,172	128	2,235	58,538	2,622	19,179	387,275	109,448	30	3,170	3,375	56	11,000	1,083	6,515	....	.. ...	8
9	Halifax	65	1,554	32,475	462	2,510	33,192	2,953	11,490	365,872	34,934	354	34,690	18,340	....	4,950	705	2,641	..	...	9
10	Hants	2	31	500	8	67	1,045	69	74	6,320	1,266	....	....	.....	....	......	2	15	7	455	10
11	Pictou	..	....	....	.....	290	5,990	465	232	10,646	6,318	....	....	....	....	....	39	216	....	...	11
12	Annapolis	11	392	7,300	94	192	3,960	315	395	19,400	9,050	....	....	.. ...	....	..	.....	....	15	2,550	12
13	Digby	53	1,704	47,900	454	382	13,285	650	740	19,460	4,384	33	2,845	7,225	1	800	417	7,240	20	2,275	13
14	King's	2	34	1,000	6	73	1,385	131	15	3,490	1,595	3	1,750	925	35	200	68	335	38	7,650	14
15	Lunenburg	158	12,899	509,920	2,440	2,288	59,574	1,275	6,178	566,560	96,930	208	119,425	56,450	91	34,250	1,312	39,360	....	. .	15
16	Queen's	8	300	10,600	71	460	8,082	505	1,510	26,902	10,531	6	670	1,460	1	500	57	324	105	105	16
17	Shelburne	80	2,780	107,720	768	1,701	38,330	2,140	7,780	311,350	39,425	....	....	.....	289	18,113	1,854	11,102	....	.....	17
18	Yarmouth	44	2,056	54,762	518	981	10,797	1,288	3,172	69,480	97,522	....	....	. . .	7	20,800	221	4,700	4	740	18
	Totals	545	24,677	819,149	5,514	15,468	319,723	19,859	68,577	2,206,518	544,159	642	163,575	88,956	483	92,313	7,781	82,623	235	16,994	

RECAPITULATION—*Continued.*

Showing the Number, Tonnage and Value of Vessels and Boats and the Quantity and Value of Fishing Materials, &c.—*Continued.*

Number.	Counties.	Fishing Materials.				Lobster Plant.					Other Fixtures Used in Fisheries.								Number.
		Smelt Nets.		Hand Lines.		Canneries.		Traps.		No. of hands employed.	Freezers and Ice Houses.		Smoke and Fish Houses.		Piers and Wharfs.		Tugs, Steamers and Smacks.		
		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
			$		$		$		$			$		$		$		$	
1	Cape Breton	....	....	2,418	1,073	16	19,250	42,400	21,900	421	2	230	285	3,616	134	3,088	4	160	1
2	Inverness	20	60	3,449	2,836	20	14,300	49,960	26,870	398	11	1,490	210	9,179	73	38,110	9	535	2
3	Richmond	24	680	4,398	1,509	15	14,150	68,544	27,680	359	....	....	231	6,880	20	2,730	20	1,880	3
4	Victoria	....	....	3,833	2,567	20	8,100	26,215	16,255	299	3	200	316	19,430	57	14,900	16	1,045	4
5	Antigonish	....	....	....	....	5	7,200	16,100	9,460	181	3	325	45	480	....	....	3	300	5
6	Colchester	12	300	....	....	1	500	1,200	720	9	....	....	....	....	....	....	....	....	6
7	Cumberland	36	894	....	....	24	20,000	31,500	17,200	283	....	....	1	75	....	....	....	....	7
8	Guysborough	14	240	4,356	2,183	30	46,250	85,800	58,205	511	24	18,450	575	43,190	246	29,255	36	21,500	8
9	Halifax	2	55	3,469	1,637	24	14,900	61,675	32,425	290	11	420	880	25,233	667	14,901	7	9,675	9
10	Hants	....	....	100	25	....	....	....	....	....	....	....	8	94	....	....	....	....	10
11	Pictou	10	240	158	65	26	36,500	44,550	26,130	432	6	95	12	209	....	....	....	....	11
12	Annapolis	....	....	475	475	....	....	7,925	5,893	....	14	875	156	6,000	....	....	....	....	12
13	Digby	18	360	559	1,973	4	2,220	24,700	128,935	661	42	3,300	94	4,490	46	32,300	2	1,050	13
14	King's	....	....	....	....	....	....	....	....	....	24	1,185	70	4,280	....	....	....	....	14
15	Lunenburg	....	....	640	3,746	7	2,640	14,230	5,692	392	2	600	333	23,900	190	17,440	10	2,250	15
16	Queen's	....	....	....	....	8	1,730	12,478	4,979	71	1	4,000	190	3,828	27	516	5	5,300	16
17	Shelburne	3	225	6,177	4,700	9	9,800	82,085	48,350	132	17	3,000	375	21,450	164	22,690	5	2,470	17
18	Yarmouth	3	100	2,038	1,115	9	12,750	30,250	22,762	120	5	1,550	80	13,910	20	18,250	12	32,150	18
	Totals	142	3,154	32,070	23,904	218	210,290	602,612	453,456	4,559	165	35,720	3,861	186,244	1,644	194,180	129	78,315	

RECAPITULATION—*Continued.*

RETURN showing the Kinds and Quantities of Fish and Fish Products in the Province of **Nova Scotia** for the Year 1897.

Number.	Counties.	Kinds of Fish.																	Number.
		Salmon.			Herring.			Mackerel.		Lobsters.		Cod.		Haddock.			Hake.		
		Fresh.	Smoked.	Salted.	Salted.	Fresh.	Smoked.	Fresh.	Salted.	Preserved in cans.	Fresh in shell.	Dried.	Tongues and sounds.	Fresh.	Dried.	Smoked finnan haddies.	Dried.	Sounds.	
		Lbs.	Lbs.	Brls	Brls.	Lbs.	Lbs.	Lbs.	Brls.	Lbs.	Cwt.	Cwt.	Brls	Lbs.	Cwt.	Lbs.	Cwt.	Lbs.	
1	Cape Breton......	18,586	....	77	4,812	15,620	12,000	4,756	954	492,552	....	10,988	...	3,475	1,233	....	23	.....	1
2	Inverness..	33,360	....	5	5,463	1,275,520	...	2,030	3,760	298,872	33	18,811	39	2,840	1,578	.....	3,867	805	2
3	Richmond	3,360	.....	14	14,885	1,500	...	....	3,994	406,148	98	32,237	15	3,000	9,948	.....	508	36	3
4	Victoria	9,850	.....	188	3,557	......	......	1,243	941	176,664	....	14,250	....	......	1,291	....	625	...	4
5	Antigonish. ..	27,472	....	...	1,968	165,828	......	8,751	226	207,860	....	601	....	....	39	....	1,839	3,219	5
6	Colchester	53,960	......	....	......	......	30,000	....	.....	20,688	....	325	....	1,750	34	....	....	.....	6
7	Cumberland......	6,500	....	...	520	5,500	.....	....	..	490,952	....	364	4	2,000	282	....	16	30	7
8	Guysborough.. .	43,645	1,700	...	23,854	382,800	.....	1,015,140	2,438	933,572	1,140	20,079	6	1,847,100	9,557	....	1,305	620	8
9	Halifax	36,274	1,792	...	7,900	31,700	....	578,150	859	537,552	12,197	17,512	9	64,300	2,021	....	2,564	3,735	9
10	Hants	9,870	.....	....	172	8,000	1,900	....	......	....	....	200	...	....	30	....	....	......	10
11	Pictou.....	32,460	.....	....	506	156,400	...	4,650	35	495,816	165	160	...	.....	5	......	265	100	11
12	Annapolis......	7,300	.....	...	3,175	....	3,000	......	.....	....	1,553	6,775	27	11,200	8,352	....	9,595	5,675	12
13	Digby..........	1,400	......	....	766	249,610	25,500	3,600	...	27,072	113,521	207,218	69	166,150	153,534	917,800	72,314	37,250	13
14	King's.	23,050	...	....	1,690	....	18,000	....	3	....	20	1,035	...	....	650	......	25	.....	14
15	Lunenburg	20,911	1,300	....	2,211	17,500	800	5,800	267	136,784	11,475	250,336	220	......	3,784	....	931	..	15
16	Queen's....... ..	12,300	450	....	3,406	....	..	....	28	139,968	4,018	7,700	....	....	455	......	28	.....	16
17	Shelburne......	6,825	.	....	39,413	....	..	134,500	154	320,730	60,040	66,800	10	....	11,773	1,200	1,000	.....	17
18	Yarmouth..	3,825	.....	....	11,000	1,412,600	1,700	395,450	....	529,036	25,422	48,127	10	657,200	5,250	30,000	5,000	.....	18
	Totals	350,948	5,242	284	125,298	3,722,578	92,900	2,154,070	13,659	5,214,266	229,682	703,518	409	2,759,015	209,816	949,000	99,905	51,470	

RECAPITULATION—*Concluded.*

RETURN showing the Kinds and Quantities of Fish and Fish Products in the Province of **Nova Scotia** for the Year 1897—*Concluded.*

Number.	Counties.	Kinds of Fish—*Con.*													Fish Products.				Total Value.		Number.
		Pollock.	Halibut.	Trout.	Shad.	Smelts.	Alewives or gaspereaux.	Bass.	Eels.	Oysters.	Flounders.	Tom cod or frost fish.	Squid.	Coarse and mixed fish.	Fish oil.	Fish as bait.	Fish as manure	Seal skins.			
		Cwt.	Lbs.	Lbs.	Brls.	Lbs.	Brls.	Lbs.	Brls.	Brls.	Lbs.	Lbs.	Brls.	Brls.	Galls.	Brls.	Brls.	No.	$	cts.	
1	Cape Breton	105	90,315	2,730	14	18,000	225	....	411	....	2,100	....	310	34	5,124	3,637	....	20	209,759	72	1
2	Inverness	....	5,515	9,350	....	14,000	379	60	481	260	....	200	1,588	2,042	9,580	6,365	760	85	280,427	50	2
3	Richmond	3,135	56,750	1,000	....	9,750	2,798	....	177	....	100,500	12,450	909	958	15,785	1,441	....	....	405,850	60	3
4	Victoria	168	15,150	6,480	....	38,510	71	....	274	850	....	400	1,635	274	7,864	2,426	....	190	160,078	01	4
5	Antigonish	....	....	1,450	....	3,625	73	3,040	107	60	11,500	280	128	20	761	596	522	....	74,060	00	5
6	Colchester	....	5,400	1,600	740	14,000	250	1,500	2	50	....	....	....	....	80	....	50	....	27,203	00	6
7	Cumberland	135	3,000	1,500	250	67,900	363	2,000	8	1,107	....	....	....	....	55	2,434	600	....	120,820	00	7
8	Guysborough	2,345	78,820	14,170	....	34,200	1,661	5,000	631	....	1,470	6,650	3,050	100	27,080	23,545	2,170	50	713,527	00	8
9	Halifax	1,994	45,576	4,860	1	25,835	284	....	413	....	75,950	30,700	43	280	9,506	1,214	1,295	....	403,037	00	9
10	Hants	45	440	8,000	391	2,800	106	700	....	....	....	....	....	....	....	....	....	....	9,148	00	10
11	Pictou	....	....	1,650	....	20,300	56	....	78	45	....	3,500	7	5	75	1,125	880	....	117,179	00	11
12	Annapolis	4,085	....	10,900	50	1,500	....	1,350	7	....	1,000	1,200	....	2,000	3,125	1,715	450	....	117,058	25	12
13	Digby	138,811	290,482	825	1,472	3,000	45	....	70	....	4,805	....	....	24,520	46,920	16,015	14,000	....	2,528,230	95	13
14	King's	457	3,425	1,200	892	....	770	....	....	....	....	....	....	....	200	492	790	....	32,590	75	14
15	Lunenburg	2,714	217,720	2,825	....	19,800	234	....	176	....	41,925	4,266	273	602	82,115	2,360	496	....	1,184,097	30	15
16	Queen's	111	5,798	1,800	....	....	548	....	....	....	....	....	....	....	2,592	117	....	....	101,032	50	16
17	Shelburne	5,198	142,300	10,600	....	7,200	1,750	....	129	....	....	1,600	....	5	34,235	21,820	....	....	924,180	50	17
18	Yarmouth	16,764	25,500	2,000	....	21,000	4,602	....	362	....	....	60,100	224	15,666	7,750	2,655	1,500	....	682,066	70	18
	Totals	176,067	986,191	82,940	3,810	301,420	14,215	13,650	3,326	2,372	239,250	121,346	8,167	46,506	252,847	87,957	23,513	345	8,090,346	78	

NOTE.—In Nos. 2, 4 and 8 add 4,583 cans of salmon, as shown in statements of said counties.
Include in No. 1, 5,000 lbs. dogfish at 1c. per lb.
do 4, 449,900 do do

RECAPITULATION

Of the Yield and Value of the Fisheries of the whole Province of **Nova Scotia**, for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.	Total Value.
			$ cts.	$ cts.	$ cts.
Salmon, pickled	Brls.	284	15 00	4,260 00	
do fresh	Lbs.	350,948	0 20	70,189 40	
do canned	"	4,583	0 15	687 20	
do smoked	"	5,242	0 20	1,048 00	76,184 60
Herring, pickled	Brls.	125,298	4 00	501,192 00	
do fresh	Lbs.	3,722,578	0 01	37,225 50	
do smoked	"	92,900	0 02	1,858 00	540,275 50
Mackerel, pickled	Brls.	13,659	15 00	204,885 00	
do fresh	Lbs.	2,154,070	0 12	258,487 48	463,372 48
Lobsters, preserved in cans	Lbs.	5,214,266	0 20	1,042,853 20	
do fresh, in shell	Cwt.	229,682	5 00	1,148,410 00	2,191,263 20
Cod, dried	"	703,518	4 00	2,814,072 00	
do tongues and sounds	Brls.	409	10 00	4,090 00	2,818,162 00
Tommy cods or frost fish	Lbs.	121,346	0 05		6,066 80
Haddock, dried	Cwt.	209,816	3 00	629,448 00	
do fresh	Lbs.	2,759,015	0 03	82,769 95	
do smoked finnan haddies	"	949,000	0 06	56,940 00	769,157 95
Hake, dried	Cwt.	99,905	2 25	224,786 00	
do sounds	Lbs.	51,470	0 50	25,735 00	250,521 00
Pollock, dried	Cwt.	176,067	2 00		352,134 00
Halibut	Lbs.	986,191	0 10		98,618 50
Trout	"	82,940	0 10		8,294 00
Smelts	"	301,420	0 05		15,071 00
Bass	"	13,650	0 10		1,365 00
Eels	Brls.	3,326	10 00		33,260 00
Shad	"	3,810	10 00		38,100 00
Alewives	"	14,215	4 00		56,860 00
Flounders	Lbs.	239,250	0 05		11,962 50
Squid	Brls.	8,167	4 00		32,668 00
Oysters	"	2,372	4 00		9,488 00
Coarse fish	"	46,506	2 00		93,012 00
Dogfish	Lbs.	454,900	0 01		4,549 00
Seal skins	No.	345			418 75
Fish oil	Galls.	252,847	0 30		75,852 00
Fish as bait	Brls.	87,957	1 50		131,935 50
Fish as manure	"	23,523	0 50		11,755 00
Total for 1897					8,090,346 78
do 1896					
Increase					

RECAPITULATION

OF the Value and Number of Fishing Vessels, Boats, Nets, &c., in the whole Province of **Nova Scotia,** for the Year 1897.

Articles.	Value.	Total.
	$	$
545 vessels (24,677 tons)	819,149	
15,468 fishing boats	319,723	
68,577 gill nets (2,206,518 fathoms)	544,159	
642 seines (163,575 fathoms)	88,950	
483 trap-nets	92,313	
7,781 trawls	82,623	
235 weirs	16,994	
142 smelt nets	3,154	
32,070 hand lines	23,904	1,990,969
218 lobster canneries	210,290	
602,612 do traps	453,456	663,746
165 freezers and ice-houses	35,720	
3,861 smoke and fish houses	186,244	
1,644 piers and wharfs (fishing)	194,180	
129 steamers and smacks	78,315	494,459
Total value	....	3,149,174

Number of Men employed in the Fisheries of **Nova Scotia.**

Men on fishing vessels	5,514
do boats	19,859
Persons employed in lobster canneries	4,559
Total	29,932

APPENDIX No. 4.

NEW BRUNSWICK.

District No. 1, comprising the county of Charlotte.—*Inspector J. H. Pratt, St. Andrews.*

District No. 2, comprising the counties of Restigouche, Gloucester, Northumberland, Kent, Westmorland and Albert.—*Inspector R. A. Chapman, Moncton.*

District No. 3, comprising the counties of St. John, King's, Queen's, Sunbury, York, Carleton and Victoria.—*Inspector H. S. Miles, Oromocto.*

DISTRICT No. 1.

REPORT ON THE FISHERIES OF DISTRICT No. 1, NEW BRUNSWICK, COMPRISING THE COUNTY OF CHARLOTTE, FOR THE YEAR 1897, BY INSPECTOR JOHN H. PRATT.

St. Andrews, N.B., 2nd January, 1898.

Hon. Sir Louis H. Davies, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

Sir,—I have the honour to submit to you my ninth annual report on the fisheries of District No. 1, New Brunswick, comprising the mainland and islands of the county of Charlotte, and also the lakes from Vanceboro northward to Forest City, along the international boundary line. I also enclose synopses of the several fishery officers' reports and tabulated statements giving the product and value by districts, together with the return of the capital employed in the prosecution of the several fisheries.

I very much regret that the returns of the catch for last season in my district will show a decrease. This falling off is to be attributed not only to the poor prices that prevailed most of the season for some kinds of fish, but also to the smaller size of the schools of fish that struck into the Bay of Fundy. For instance, large herring for smoking purposes, were very late coming in at Grand Manan, decreasing the catch for that island to a large extent and therefore having quite an effect in lowering the value of the returns from that district. However, on account of the light stocks of fish on hand held by the fishermen and dealers at home, and reports from abroad indicating light stocks being held by foreign dealers, we have reason to believe that better prices will prevail in the coming season. During the summer I often visited the Nova Scotia coast, cruising as far south as Cape Sable a number of times, and during May and October our cruises were continued along the southern coast of Nova Scotia to Sydney, Cape Breton. A short cruise was also taken through the Gut of Canso to Prince Edward Island. At all the ports visited, our best efforts were employed to compel the observance of the various fishery laws and regulations by local and foreign fishermen.

Considerable illegal lobster fishing was found in progress during the latter part of the year, among the fishermen residing between Halifax and Canso ; while enforcing the lobster regulations, we destroyed a large amount of fishing gear in that vicinity.

During November and December bounty claims of the fishermen in Charlotte County were taken. They were all collected by December 12th, on which date the ship was placed in winter quarters at St. John, N.B., and the crew paid off.

In looking over the past season's fishing operations, the fishermen of the Bay of Fundy have met with a fair measure of success, and have little cause for complaint.

I issued licenses for 304 herring weirs this year, a decrease from the previous season of five licenses.

The fishery overseer at Grand Manan was dismissed in June last, and I have since devoted more than ordinary attention to the fisheries of that important island. Those fisheries being very extensive, and the only industry on the island, it is important that an intelligent officer be appointed there.

The staff of special guardians performed their duties during the year very creditably, and very few violations of the Fisheries Act or regulations occurred. The usual difficulties were encountered in my attempts to discover the names of the offenders.

A case against Thomas Lord, of West Isles, for resisting special guardian Dick while in the discharge of his duties, was tried in St. Andrews before a magistrate, but although the defendant was committed to stand trial before a higher court, the Grand Jury failed to find a true bill against him. But it had the effect of curbing several lawless characters who possess a disposition to violate some of the fishery regulations when they can do so with impunity.

Owing to the fact that many of the fishing vessels that frequent the several fishing grounds in the Charlotte County waters take away their catches without the officers in my district securing their returns, it tends to reduce the yield of our locality. However, I presume the said catch is included by the officers in their respective districts.

The value of the catch during the past season was $238,414.46 less than in 1896.

Total value of fisheries, 1896	$1,108,701 76
" " 1897	870,287 30
Decrease	$238,414 46

HERRING.

A considerable portion of the above decrease in the value of the catch, is to be attributed to the shortage in the catch of herring suitable for smoking purposes. At Grand Manan they were extremely late in striking in, and consequently the amount of fish smoked by the inhabitants of that island will show a very large decrease from that of the previous year. Small herring for sardines were quite plentiful, and good prices realized from the manufacturers at Eastport and Lubec. Harbour de Lute weirs and those to the eastward of Latête well paid their owners. The district between the Latête and Lepreaux show a catch of only 3,000 barrels of small herring in 1896, but during the past season the catch of small herring in the same district increased to over 30,000 barrels, thus showing that the herring have not by any means disappeared from the Bay of Fundy.

During the past canning season in the sardine factories of the State of Maine, it is estimated that the pack (900,000 cases) was about the same as 1896. The herring fisheries at Dark Harbour, Grand Manan, were very good all the year, and a good benefit resulted to the lessee of that privilege.

LOBSTERS.

The catch of lobsters show a slight decrease. It has been prosecuted with the same vigour as formerly, but on the mainland they were not as plentiful as in former years. Many of the fishermen operating there took up their traps earlier than usual and entered into other branches of the fishing industry. At Grand Manan the fishing was fair, and good prices realized from the factory operating there. The one also at Welshpool remunerated them very well for their work. The proposed lobster regulations raising the size to 10½ inches, although pleasing to the majority of lobster fishermen, had the opposite effect to those in that business on Grand Manan. They sent in a large petition to your department against any change in the regulations, which was reported on by me. The fishermen feel certain that regulations increasing the size limit to 10½ inches is the proper course for your department to take in order that this fishery may be saved from destruction, and they have the experience of the adjoining State of Maine to support their views. Two years ago that state passed a law allowing no lobsters to be taken less than 10½ inches in length, and the most favourable results have been realized. Lobster canning at the several factories in this district has been continued vigorously for the season, and a ready market has been found for all the goods packed. They were of most excellent quality and were packed with the greatest care.

SALMON.

The results derived from the efficient protection, and a judicious planting of salmon ova, cannot but be noticed by the good reports coming from the fishery officers having charge of the St. Croix River. Frank Todd, Esq., the overseer for the district, and the guardians under him, report an increased run of salmon this season over any previous year. Good catches with the rod were made by anglers at the pool below the lower dam at St. Stephen.

The guardians patrolled the river faithfully, and poaching was seldom attempted. It is sincerely hoped that your department will see fit in future to continue their guardians on the St. Croix River each season, for otherwise the poachers who still reside in the vicinity, will again return to their old tricks.

MACKEREL.

Only a couple of barrels of this fish were caught on the inshore grounds, and those were taken (mixed with herring) in several of the weirs. Most of the catch of mackerel seen in the statements were caught by a Campobello schooner off the Nova Scotia coast. As they may not be noted in the returns of the officer of the district in which they were caught, I placed them in my returns.

Years ago mackerel were very numerous in the Bay of Fundy and many theories are advanced as to the cause of their non-appearance, but the matter still remains in doubt.

POLLOCK.

There were some large schools of pollock in the Bay of Fundy this season, but they did not continue to play on the inshore fishing grounds for such a lengthy period as they did in 1896. Therefore, a decrease in the catch of 20 per cent is the result. Fairly good prices were obtained and the stocks were quickly cleared off.

HAKE.

An increased catch of 2,000 quintals of this fish over that of last season will be noticed by the returns, due to several more vessels being engaged in the fishery, and the schools being somewhat more plentiful on the grounds than in the preceding season.

COD AND HADDOCK.

These fish show a decrease for this season. This, I attribute to many of the fishermen who formerly fished for them with trawls and hand lines, having gone to weir building and fishing.

FISHWAYS.

The fishways of this district are all in fairly good condition and are well looked after by the several officers. The most important ones are on the St. Croix River, and are kept in the best of order by Fishery Officer Todd. The fishway at Dennis Stream on the Magaguadavic River is somewhat out of repair just now, but owing to the present uncertainty as to whether salmon are ascending the main river in any numbers, it would not be advisable to repair this fishway.

The new fishway at St. George, erected over a year ago, is answering its several purposes very well, and shows not the slightest evidence of weakness.

CAMPOBELLO FISHERY FAIR.

I cannot close my report without referring to the energy displayed by the officers of this society in their laudable efforts to advance, not only the interest of the fishermen of Campobello, but the whole county of Charlotte.

Their annual fair was held at Welshpool during October, and fine weather prevailed on the day appointed. A large number of beautiful samples of cured fish were placed on exhibition in the building set apart for that purpose, and were much admired by the large numbers of persons who attended the fair. Various water sports took place during the day, ending with the society's annual dinner in the evening and a grand ball.

I noticed many highly complimentary notices in several New Brunswick and Nova Scotia papers, speaking favourably of this society's annual exhibition, and they strongly urge similar organizations at other places on the Canadian coast.

SYNOPSIS OF OFFICERS' REPORTS.

Overseer Brown, of Campobello, in his annual report states that the fisheries during the season in his district have been fairly successful. There has been a slight decrease in the catch of cod, owing to a number of Campobello vessels engaging in other fisheries. Only about one-half the usual catch of pollock has been taken by our fishermen, as these fish did not take the hook as in former years. There were good catches of hake and haddock, and the dogfish did not interfere with the line fisheries to any serious extent. All line fish realized fairly good prices. Herring of all sizes struck in around this island in fairly large schools, and good catches were made. Large herring for smoking were plentiful, and the fishermen filled their smoke-houses. The weirs made good hauls of sardines, several of them caught from $1,000 to $4,000 worth of fish. The close seasons have been well observed, except for some small trouble he had destroying a number of lobster traps. I think that weir fishermen should be allowed to seine their weirs immediately after midnight on Sundays instead of six Monday mornings. There has been an increase in the catch of lobsters, due to more men being engaged in the fishery and a larger number of traps used. During the winter high prices have been paid for them.

Overseer Lord, of, West Isles, reports that there is a falling off in the catch of all kinds of fish in his district, which he attributes to smaller sized schools than usual frequenting his district, and also that greater numbers of the residents of West Isles are finding employment in the sardine factories in Maine.

Overseer Todd, of St. Stephen, reports very little change in fishery matters from the previous year. Salmon are steadily increasing, more were taken with the fly in the lower pools last year than ever before. He thinks the number caught exceeds the catch on the famous Penobscott River, and if efficient watchmen are retained to guard the river as heretofore, he thinks our river will soon become noted for its salmon. The several fishways in this district are all in good order and have been kept open during the season.

Overseer Conrad at St. Croix, states that little or no trouble was experienced by him in enforcing the fisheries regulations on the border lakes. His frequent cruises to the various lakes in carrying on his lumber operations, enabled him to watch sharply al portions of his district. Many of the persons formerly engaged in fishing the lakes have moved away or gone to other employments. Fishing has been fairly good and there is no doubt (now that netting has been stopped) that good sport will soon be had with salmon, trout, etc.

Overseer Campbell, of St. Andrews, states that line fishing was not so good as last year, but more hands had been employed at it, more especially in St. Andrews Bay. On the whole the fishermen have not done as well this year as last, and the lobster fishing has been poorer. The catch of sardine herring has been smaller than last year and in the upper part of St. Andrews Bay small herring were scarce all the season. Prices were much better, however. Very little illegal fishing has been done in 1897, owing to the vigilance of the officers, and the presence of the "Curlew." Quite a number of smelts were caught in the weirs, mixed with the herring, and sold well in the local trade. The fishing for land locked salmon in the Chamcook lakes was very poor this year. There were no mackerel in the bay this season. The trout fishing has been better than for years, and there has been less poaching. On the whole, owing to better prices the weir fishermen have done as well financially as other years. With further reference to the lobster fishery, the taking of female fish in winter, when there is no spawn in them, and the taking of these under 10½ inches, for canning, is fast causing these fish to become extinct. He thinks January and February fishing should be stopped, and no lobsters less than 10½ inches allowed to be taken. With the exception of lobsters, the quantity of fish in his district seems not to decrease but become larger.

Special Guardian Cross of Beaver Harbour District, reports a falling off in all kinds of fish, except sardine herring. Hake were not so plentiful as last year but commanded better prices. The catch of cod and haddock remained about the same as last season, but the pollock catch fell off about one-third. Sardine herring were very plentiful and a ready market was found at Eastport and Lubec for all that was caught. The lobster catch was about the same as last year and less of them shipped alive. More cases of them were canned than the previous year. A few very small mackerel were taken in a weir in October. All of the fish were sold in the Dominion, except lobsters and sardines. The several close seasons have been strictly observed.

Special Guardian Dick of Latête reports the catch of all kinds of fish in his district about the same as in 1896, with the exception of sardines, which were more plentiful and commanded a better price. He used every effort to have the several close seasons strictly observed and with the exception of having to destroy a number of lobster traps for fishing during the close season, had little or no trouble.

Special Guardian Hall, at St. George reports that he has every reason to believe that salmon have ascended the fishways at St. George this season, and passed up river. The fishways are in good order, and he has kept them in good repair during the season. Trout fishing has been good and many large and fine fish have been taken.

I have the honour to be, sir,

Your obedient servant,

JOHN H. PRATT,
Inspector of Fisheries.

DISTRICT No. 2.

REPORT ON THE FISHERIES OF DISTRICT No. 2, COMPRISING THE COUNTIES OF RESTIGOUCHE, GLOUCESTER, NORTHUMBERLAND, KENT, WESTMORELAND AND ALBERT, FOR THE YEAR 1897, BY INSPECTOR R. A. CHAPMAN.

MONCTON, N.B., 3rd January, 1898.

Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries, Ottawa.

SIR,—I have the honour to submit my report of the fisheries in District No. 2' province of New Brunswick, for the year 1897, with tabulated statements giving the products and values by districts and counties, together with an estimate of the capital employed in the prosecution of the fisheries. These returns for the first time since I have been Inspector of this district, show a marked falling off from last year's big catch in nearly all kinds of fish, but still the amount in the aggregate is nearly twice as large as in 1890. While the change of districts and officers may have made some difference in the returns both as to quantity of fish taken and materials used in some cases, there is no doubt this has been an off year, some reasons for which will appear under the heads of the principal kinds of fish caught.

SALMON.

While there has been in the aggregate a very small catch of this valuable fish, compared with the large quantity taken in 1896, which was the greatest in many years, a few districts report nearly as many this year. The fishermen believe the cold weather prevailing in the early part of last season, was the cause of the deficiency by preventing the fish from coming in their usual numbers to the coasts and into the rivers, the streams were well filled last fall, but many of the fishermen insist that the fish which come in late in the season are not the same run at all as those taken in the nets, and that therefore a good full run does not help the catch.

SHAD.

The usual small catch is reported. This fishery, some 45 or 50 years ago, gave employment to a large number of boats and men at the head of the Bay of Fundy, and was remunerative, but the continued and increased destruction of the parent fish (when on the way to their spawning grounds in May and early part of June) in St. John Harbour and River has nearly destroyed it. I believe this is the only case in which no protection is given during the spawning season to so valuable a fish. At the conference of Inspectors at Ottawa this matter was fully inquired into and discussed, and a resolution passed recommending a close season for these fish in the Maritime Provinces until June 20th, but it was never acted upon. At this discussion it was fully shown that these fish when they enter St. John Harbour and River are full of spawn, that they go up this river and its tributaries solely to deposit their eggs, that the few that are not caught return to sea and proceed to their feeding grounds at the head of the Bay of Fundy, where by the 1st of September they become very fat and certainly are delicious. There cannot be a doubt if they were allowed to go up the streams and spawn unmolested, that in five years the waters at the head of the Bay would again be teeming with them, and a valuable fishery be restored. It certainly appears more than wrong to have them thus caught full of spawn just ready to be deposited, and any one visiting St. John market in May and early part of June can see for themselves the truth of this statement, or the same may be seen at Moncton or any other place to which they are sent from St. John for sale.

SMELTS.

The quantity of these little fish appears to be increasing rather than diminishing, but their capture, especially in the small rivers, depends each year upon certain conditions. Just before the ice forms these rivers are swarming with them, but as the channels are narrow and the flats on each side bare or nearly so at low tide, as soon as the ice forms they gather in the channels and make for the sea, so that if the fishermen do not get the very first run after the ice makes, they lose them altogether, except in large rivers like the Miramichi, Restigouche, etc., and in the lower reaches and estuaries, where they are taken more or less all winter. In the spring of the year even long rivers like the Miramichi and its tributaries are filled with them for miles, so that they could be scooped up in any way, and were formerly used in immense quantities for feeding hogs and sheep, as well as for manure; but this, of course, is now stopped. This is now one of the most important fisheries we have, giving employment to a large number of people in the winter season, when there is nothing else to do; and if the catch could be regulated and a limited quantity only be taken, there is no doubt with proper preparations of ice, etc., for packing, considerable quantities might be shipped earlier than is now allowed, but great care would have to be taken as indiscriminate fishing, when they are so plentiful, would not only destroy the markets, but would certainly lead to great quantities being lost entirely.

BASS.

The prohibition on the north-west Miramichi River, etc., a few years ago, had much to do with restoring this valuable fishery; but they grow slowly and it takes many years in comparison with other fish to obtain a large size, consequently they require to be carefully looked after and preserved. For this reason I do not think that during the spawning season even hook and line fishing should be allowed, as thereby many large fish are taken filled with spawn. They are now worth nearly as much per pound as salmon, and again appear to be diminishing on our coasts.

HERRING.

The usual large quantity of spring herring were taken both for food and bait, but they are a poor fish. The fishing was also fair on the Caraquet herring banks for the past two or three years; the latter are good fish, and the people of Miscou and adjoining districts in Gloucester County profit largely thereby.

COD.

There appeared to be no scarcity of this staple fish in the past year, but rough weather and the very low prices realized for them, gave little inducement to prosecute this fishery as vigorously as usual; 1897 has indeed been a very trying one for those engaged in this industry.

MACKEREL.

This fishery was almost a failure everywhere on our coasts, and even off Richibucto in Kent County, where such extensive preparations were made in the way of boats, nets and steamers to gather them etc., the catch was extremely small in comparison with the outlay and work done, but these fish appear to be very erratic and another season may be fairly plentiful.

TROUT.

It appears doubtful if much protection should be afforded these fish on salmon breeding rivers, as they are believed to be destructive of spawn, fry, etc., but on lakes and inland waters where no salmon exist, they should be preserved. The catch of this game fish does not diminish.

LOBSTERS.

With number of traps and appliances largely increasing from year to year, the catch is diminishing. While it appears certain that the same open season does not suit all parts of our coasts, arrangement should be made if possible to do away with any further extensions, and to prevent the extermination of this valuable fishery, even if entire prohibition has to be resorted to for a few years. I would much like to see fall fishing tried in place of spring, as this would give all the mature females each season time to throw off their spawn, which would add millions of young fish every year, but it appears difficult to get the fishermen to agree to any arrangement, even though it would be entirely for their own benefit. One man, I caught this season fishing after the season, acknowledged that he had caught and packed during the legal term of about two months, 100 cases, worth, clear of boxes and tins, $750, with one boat, and all the help he had was his wife and little boy ; yet, notwithstanding that he knew, if everyone was allowed to fish during the whole summer and fall, as he was trying to do, the fish would be exterminated in two or three years, he was trying to destroy what was giving him so large a profit. It is hard to deal with such men, and I am sorry to say, there are too many of them ; they will fight the department and its officers who are trying to preserve that which is giving them their living. As many of the local officers have been recently appointed, they have made no reports containing anything important ; they will another year be better prepared for this part of their work, as I lose no occasion to talk over every matter connected with their duties and the various fisheries of their respective districts with them. I also rendered them every possible assistance in making up their returns this year.

I have the honour to be, sir,

Your obedient servant,

R. A. CHAPMAN,
Inspector of Fisheries.

DISTRICT No. 3.

REPORT OF THE FISHERIES OF DISTRICT No. 3, OF NEW BRUNSWICK, COMPRISING THE COUNTIES OF VICTORIA, CARLETON, YORK, SUNBURY, QUEEN'S, KING'S AND ST. JOHN, FOR THE YEAR 1897 BY INSPECTOR H. S. MILES.

OROMOCTO, SUNBURY CO., 2nd January, 1898.

The Honourable Sir L. H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit herewith my annual report of the fisheries of District No. 3, province of New Brunswick, also statistical returns showing the values and quantities of fish taken. The value of the catch in this district for 1896 was $290,739.20 as compared with $312,195.10 for 1897 an increase in value of $21,455.90 as shown. Considerable increase in the catch of salmon is noted throughout this entire district owing undoubtedly to the beneficial results of good guardianship and the attention that has been given to this particular branch of the fishing industry. At Pisarinco, and in St. John Harbour sometimes, over one hundred dollars' worth of salmon were taken by a single boat as a result of one night's fishing. Ninety per cent of the salmon caught in the above named places was shipped fresh in ice to the United States, where good prices are obtained. Alewives show a decrease in the catch, which was owing partly to the late freshet, and also to the inclement weather in April, nevertheless a large quantity were taken, of which over 19,000 barrels were salted for shipment to the West Indies, which offers a ready market for an unlimited supply of this fish as it is known to stand climate better than any other kind that has heretofore been shipped there.

Large quantities were sent to Nova Scotia fresh for bait and the balance smoked for home and foreign consumption.

Shad also shows a slight decrease, owing to the scarcity of this fish as a result of over fishing for several years past. Herring were unusually plentiful in the bay and harbour of St. John and large quantities were taken. Cod and other line fish show an increase resulting from the more vigorous efforts of not only fishermen but farmers living along the bay shore from St. John to Dipper Harbour taking up the industry from farming time until the haying season began. The establishment of a fish packing business being started at Dipper Harbour was the stimulus to the extra exertion on the part of the farmer as they before had not had a convenient market.

Sardines were plentiful, but as there were no canning factories in operation the past season, none were taken except for bait, &c.

SYNOPSIS OF FISHERY OVERSEERS REPORTS.

Overseer O'Brien, of St. John Co., says that he had much trouble in enforcing the fishery laws and regulations as the fishermen showed a determined effort to evade the law in every particular. For Sunday fishing fifteen convictions were obtained and fourteen for illegal killing of young fish in weirs, etc.

King's County.—There are no fishery officers in King's County, none have been appointed since dismissals of old officers in August. I have made very careful inquiry and find that the catch of the last two years would not differ very much.

Overseer Isaac T. Hetherington of Jenkins, Queens County reports as follows :—

The falling off of shad in the Washademoak Lake (caused by over-fishing in past years) was unprecedented, but in the other waters of the county was up to or slightly above the general average. Salmon, alewives and pickerel were plentiful and taken in considerable quantities, the alewives were salted, salmon and pickerel shipped fresh in ice to the United States. Of shad 30 per cent were shipped in ice, 30 per cent used fresh, and the balance salted for the local market.

Overseer Cecil F. McLean, Sunbury County, says that the catch of shad was better than last year, owing to the run being better, lasting longer and coming at the time when the water was at the proper height, to enable the fishermen to clear the obstructions on the drifting grounds, thus giving them an opportunity to fish to far greater advantage. The fishermen report the run of alewives as better than last year and lasting longer but that the price is not so remunerative as last year. The greater part of the catch was sold to St. John merchants for shipment, only about 25 per cent being smoked, and used at home. The catch of salmon exceeds that of last year, accounted for by a more vigorous prosecution of fishing for salmon. Pickerel were caught more plentiful this season than heretofore in French Lake, Sheffield, and although the fish were more numerous this year, they were not so large as last year. Pickerel fishing is a very important branch of the industry, and could be protected very much by allowing no net to take them with meshes of a less size than three inches extension measure. All pickerel caught in my district were shipped on ice to Boston market. Both Hockin fishways on Oromocto River are useless. The Sawdust Act has been fairly well observed. The several close seasons have been strictly complied with and no violations have come to my notice.

Overseer Orr reports from York Co. as follows :—" During the fishing season I devoted all my time on the St. John and South-west Miramichi rivers in my district. As I had no instructions to look after the St. Croix waters and Magaguadavic Lakes, I spent the greater part of my time on the tidal waters of the River St. John. Drifting for salmon, in those waters, is carried on to a very great extent, and without more assistance little can be done to prevent this illegal fishing. During the months of June and July spearing on South-west Miramichi, between Boiestown and the Forks, was carried on to a very great extent, but about the first of August, a gentleman, who has always taken great interest in protecting the salmon which reached their spawning grounds, asked the government to appoint four guardians between Boiestown and the Forks, a distance of fifty miles. This was immediately done. Later on, it was found that four men were not sufficient to protect a fifty miles stretch, consequently you succeeded in getting two more special guardians stationed on the river to assist the other four. Since then no illegal fishing has been done. Quite a large run of salmon ascended the river during the month of September. Alex. McDonald, head guardian, informed me that this season has given the largest number of salmon in the spawning beds that he has seen for ten years, proving beyond doubt that protection is most important. He also says that owing to the lateness of putting on guardians, a great deal of spearing was done. Early in June one party speared 14 salmon in one night. It is absolutely necessary, in order to stop this wholesale slaughter of salmon, that guardians should be placed on the river early in June. There has been an increase of one-third over 1896. The continuous high water of St. John River during last season was, I think, the cause of this increase. All fish were used for home consumption. The close season has been fairly observed, although drifting on St. John and netting and spearing on South-west Miramichi, between Indiantown and Boiestown, have been carried on to some extent. The Saw-dust Act, as usual, has not been observed. In my opinion, dumping saw-dust in large rivers, like the St. John, does very little injury to the salmon fisheries, but throwing it into its tributaries and other small rivers is certainly disastrous.

There are no fishways in my district. One in Ell River is very much needed."

Guardian Alex. McDonald, on S.W. Miramichi River in York Co., says that there has been a decided increase in the catch of salmon, trout and alewives. There was illegal fishing before the guardians were appointed this year and many grilse were taken.

William T. Blake, special fishery guardian for the lower district of the county of Carleton, New Brunswick, on St. John River, makes the following report:—

The fishway overseen by William McDonald at the mouth of the Maduxnakeag River is in good repair. Since my appointment in July, I have seized several nets, which I now have in my possession; never could find any owners for the nets. I have stopped several parties from fishing. I also found out by the inhabitants along the river, and by my own observations that the salmon are on the increase. Nearly all the mills along the river put the sawdust in the water. I would recommend that the owners of mills be instructed to take care of sawdust. I also recommend that one guardian be appointed for the lower district of Carleton County, and he to commence work not later than May, as he can then stop the putting in of stakes, &c.

Guardian Chas. McEwan, of Beaufort, Carleton County, on the S.W. Miramichi River, reports that there was a strict observance of the fishery laws throughout his district after his appointment, but that in the vicinity of West Brook another guardian is necessary.

Special Guardian D. E. Brooks, of Bristol, Carleton County, states that salmon were more plentiful in the upper section of the St. John River than they have been for years, and that the catch was much above the average. Of other fish, trout and pickerel were the most important. Some of the inhabitants will resort to almost any means to get fish illegally.

Overseer Leonard Wilson, of Victoria County, says that owing to the artificial culture of salmon and their efficient protection, they have become very plentiful in the various rivers and streams which they frequent in his district. A great many were caught for home consumption and the local markets, but none for export. Respecting illegal fishing, there has been only one case reported, that of spearing, for which the offender was fined five dollars and his canoe confiscated. The sawdust was dumped into the rivers, and caused much injury to the fishery industry. No fishways in my district, although badly needed. More fishery guardians are needed, and the protection should extend over a longer period than it did this year.

I am, sir, your obedient servant,

H. S. MILES.

NEW BRUNSWICK—DISTRICT No. 1.

Return showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries; Quantity and Value of Fishing Material; Kinds and Quantities of Fish, and the Total Number of Men employed, &c., in District No. 1, Province of **New Brunswick,** for the Year 1897.

Number.	Districts.	Fishing Vessels and Boats.							Fishing Material.										Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trawls.		Weirs.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	
	Charlotte County.			$			$				$			$		$		$	
1	Lepreaux to Letang	12	231	4500	64	118	2189	154	172	5400	2400	34	1020	2040	325	1880	24	6500	1
2	Letang to St. George	5	69	1300	22	206	7152	172	28	865	238	61	1628	2470	102	927	58	12975	2
3	St. George to St. Stephen	2	13	550	4	76	1500	78	2	120	60	32	960	960	60	360	37	11100	3
4	Campobello	11	248	5600	61	120	3576	145	85	2517	748	23	1250	1250	114	1150	19	7600	4
5	West Isles	7	124	2500	28	300	11000	260	85	7500	850	75	2250	4500	75	750	73	32850	5
6	Grand Manan	19	400	9000	100	275	59000	478	300	12500	3500	41	1420	7250	300	1000	45	47000	6
	Totals.	56	1085	23450	279	1095	84417	1287	672	28902	7796	266	8528	18470	976	6067	256	118025	

RETURN showing the Quantity and Value of Fish, &c.—**New Brunswick**—*Con.*

Number.	Districts.	Kinds of Fish.																		Number.
		Salmon, fresh, lbs.	Scallops, preserved in cans, lbs.	Scallops, brls.	Herring, salted, brls.	Herring, fresh or frozen, lbs.	Herring, smoked, lbs.	Clams, canned, lbs.	Clams, shelled, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Haddock, smoked finnan haddies, lbs.	Hake, dried, cwt.	Hake sounds, lbs.	Pollock, cwt.	Halibut, lbs.	
	Charlotte County.																			
1	St. Stephen district, river and lakes	600	....	....	....	....	....	....	....	....	....	..	....	..	....	....	....	....	....	1
2	St. George district, river and lakes	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
3	Letete to Letang	....	....	305	420	....	....	....	94	....	1129	1259	....	1592	....	2404	2300	1942	....	3
4	Letang to Lepreaux	....	12000	71	305	....	....	36720	932	33144	6620	150	6000	700	....	3920	3920	365	....	4
5	Oak Bay and St. Andrews to St. George	....	....	....	....	2500	24560	....	650	....	400	500	134000	800	90000	1200	....	500	....	5
6	West Isles	....	....	....	100	....	28000	....	....	....	712	100	425000	..	2000	500	625	500	....	6
7	Campobello	....	....	....	1081	....	541200	....	....	23760	609	704	178000	....	16800	5964	6212	3676	3000	7
8	Grand Manan	....	....	....	6000	8000000	6000000	....	....	45000	6000	4000	....	400	2000	4000	4000	5150	80000	8
	Totals	600	12000	376	7966	8002500	6593760	36720	1676	101904	15470	6713	743000	3192	110800	17988	17057	12133	83000	

RETURN showing the Quantity and Value of Fish, &c.—New Brunswick—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.												FISH PRODUCTS.			Seal skins, number.	TOTAL VALUE.		Number.
		Trout, lbs.	Mackerel, brls.	Smelts, lbs.	Alewives or gaspereaux, brls.	Pickerel, lbs.	Shad, brls.	Sardines, cans.	Sardines, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		$	cts.	
	Charlotte County.																			
1	St. Stephen district, river and lakes	5000	....	4000	250	3500	....	...	....	....	700	....	....	....	....	....	....	2,030	00	1
2	St. George district, river and lakes	10000	....	800	10	....	....	....	....	....	1000	....	....	....	....	....	....	1,130	00	2
3	Letete to Letang	....	....	....	....	....	....	....	59915	31200	....	93	....	4700	1309	225	....	154,248	50	3
4	Letang to Lepreaux	....	....	....	....	4	40	300000	32420	7700	....	5	200	5120	1550	1550	2	153,201	50	4
5	Oak Bay and St. Andrews to St. George	....	....	550	....	....	....	57600	13490	8000	....	75	....	....	1800	2.00	....	58,973	70	5
6	West Isles	....	....	500	....	....	....	150000	26925	....	....	....	....	900	800	100	....	83,122	50	6
7	Campobello	....	49	500	....	....	....	....	18648	....	212	....	....	6820	....	925	....	96,861	10	7
8	Grand Manan	....	....	....	....	....	....	....	2000	....	....	500	....	12000	1000		....	320,720	00	8
	Totals	15000	49	6350	260	3504	40	507600	153398	46900	1912	673	200	29540	6459	5000	2	870,287	30	

RECAPITULATION

Of the Yield and Value of the Fisheries in District No. 1, **New Brunswick**, for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon, fresh, in ice	Lbs.	600	0 20	120 00
Scallops	Cans.	12,000	0 15	1,800 00
do	Brls.	376	2 50	940 00
Herring, salted	"	7,906	4 00	31,624 00
do fresh or frozen	Lbs.	8,002,500	0 01	80,025 00
do smoked	"	6,593,760	0 02	131,875 20
Clams	Cans.	36,720	0 10	3,672 00
do shelled	Brls.	1,676	7 00	11,732 00
Lobsters, canned	Lbs.	101,904	0 20	20,380 80
do fresh, in shell	Cwt.	15,470	0 05	77,350 00
Cod, dried	"	6,713	4 00	26,852 00
Haddock, fresh	Lbs.	743,000	0 03	22,290 00
do dried	Cwt.	3,492	3 00	10,476 00
do smoked finnan haddies	Lbs.	110,800	0 06	6,648 00
Hake, dried	Cwt.	17,988	2 25	40,473 00
do sounds	Lbs.	17,057	0 50	8,528 50
Pollock	Cwt.	12,133	2 00	24,266 00
Halibut	Lbs.	83,000	0 10	8,300 00
Trout	"	15,000	0 10	1,500 00
Mackerel	Brls.	49	15 00	735 00
Smelts	Lbs.	6,350	0 05	317 50
Alewives	Brls.	260	4 00	1,040 00
Pickerel	Lbs.	3,504	0 05	175 20
Shad	Brls.	40	10 00	400 00
Sardines, canned	Cans.	507,600	0 05	25,380 00
do fresh	Brls.	153,398	2 00	306,796 00
Flounders	Lbs.	46,900	0 05	2,345 00
Tom cods or frost fish	"	1,912	0 05	95 60
Squid	Brls.	673	4 00	2,692 00
Coarse or mixed fish	"	200	2 00	400 00
Fish oil	Galls.	29,540	0 30	8,862 00
Fish used as bait	Brls.	6,459	1 50	9,688 50
do manure	"	5,000	0 50	2,500 00
Seal skins	No.	2	4 00	8 00
Total value of catch for 1897				870,287 30
do do 1896				1,108,701 76
Decrease during 1897				238,414 46

Number and Value of Vessels, Boats, Nets, Weirs, &c., engaged in the Fisheries of District No. 1, **New Brunswick,** for the Year 1897.

Material.	Value.
	$ cts.
56 vessels (tonnage 1,085)	23,450 00
1,095 fishing boats	84,417 00
672 gill nets (28,902 fathoms)	7,796 00
266 seines (8,528 fathoms)	18,470 00
976 trawls	6,067 00
256 weirs	118,025 00
26 smelt nets	270 00
7 lobster canneries	15,000 00
1,583 hand lines	382 65
24,192 lobster traps. (182 persons employed)	19,470 00
7 freezers or ice-houses	19,000 00
776 smoke or fish-houses,	158,185 00
256 piers or wharfs	52,280 00
10 tugs and smacks	5,275 00
2 sardine canneries	3,000 00
1 fish-curing factory	3,500 00
1 fish-guano do	5,000 00
80 weir scows	4,000 00
50 pile drivers	500 00
30 fish-presses	3,000 00
Total value of material	547,087 65

NEW BRUNSWICK—DISTRICT No. 2.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men employed, &c., in District No. 2, Province of **New Brunswick**, for the Year 1897

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.			Lobster Plant.					Number.
		Vessels.				Boats.			Gill Nets			Canneries.		Traps.		Number of hands employed.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.		
	Restigouche County.			$			$				$		$		$		
1	Above Dalhousie	...	....	...	....	30	500	60	50	8000	8000	....	..	60	60	....	1
2	Below Dalhousie	...	....	...	....	170	3500	330	80	18000	20000	1	1000	2200	2000	60	2
	Totals	....	......	.	....	200	4000	390	130	26000	28000	1	1000	2260	2060	60	
	Gloucester County.																
1	Beresford and part of Bathurst	....	......	.	...	400	8500	800	450	22000	10000	3	1500	4860	4000	68	1
2	Caraquet New Bandon and Bathurst	127	1384	47100	385	540	16350	1000	700	42780	18600	20	16800	25000	22000	525	2
3	Shippegan, Inkerman and Saumarez	88	1004	43000	305	667	23400	1215	1140	53500	26100	36	28000	47000	43000	952	3
	Totals	215	2388	90100	690	1607	48250	3015	2290	118280	54700	59	46300	76860	69000	1545	
	Northumberland County.																
1	Neguac, &c	1	13	390	3	190	3800	260	1200	25600	15360	1	1200	4000	4000	56	1
2	Bay du Vin, &c	2	30	600	6	235	9400	600	800	80000	80000	5	3600	8200	8000	181	2
3	Chatham, &c	4	94	2800	18	150	3000	150	650	13000	9000	3	8000	......	....	....	3
4	South-west and North-west Miramichi Rivers	....	..	. .	...	110	1500	110	100	6500	6000	...	....	....	....	....	4
	Totals	7	137	3790	27	685	17700	1120	2750	125100	110360	9	12800	12200	12000	237	

	Kent County.																
1	Richibucto, St. Louis and Carleton, &c.	1	20	600	3	314	11200	560	2216	44300	11800	27	16100	23400	20500	431	1
2	Buctouche and Cocagne	..	.....	....	....	340	10000	640	600	12000	4000	28	10000	25000	22000	350	2
	Totals	1	20	600	3	654	21200	1200	2816	56300	15800	55	26100	48400	42500	781	
	Westmorland County.																
1	Shediac, Moncton and Salisbury	....	.....	......	...	320	10000	650	600	26000	11000	25	15000	20000	20000	350	1
2	Botsford	....	.....	......	....	350	9000	650	300	9000	4000	45	28000	26000	22000	850	2
3	Sackville and Westmorland	....	.. .	....	....	41	2000	60	230	8000	2400	....	..	100	100	3	3
4	Dorchester	....	.....	.....	. . .	33	1800	66	37	8300	3200	. .	......	......	....	....	4
	Totals	...	......	......	. .	744	22800	1426	1167	51300	20600	70	43000	46100	42100	1203	
1	*Albert County*, in all	....	......	.....	...	5	200	10	6	650	200	.	.. ..	....	....	....	1
	Grand totals	223	2545	94490	720	3895	114150	7161	9159	377630	229660	194	129200	185820	167660	3826	

RETURN showing the Quantity and Value of Fishing Materials, &c.—**New Brunswick**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.																
		Salmon, fresh, lbs.	Salmon, preserved in cans, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake, sounds, lbs.	Halibut, lbs
	Restigouche County.																	
1	Above Dalhousie	65000	....	....	....	2000	....	....	....	....	140	....	....	....	....	....	....	....
2	Below Dalhousie	135000	....	....	2000	25000	....	400	....	37400	220	40	....	....	....	....	....	....
	Totals	200000	....	....	2000	27000	....	400	....	37400	360	40	....	....	....	....	....	....
	Gloucester County.																	
1	Beresford and part of Bathurst	75000	500	15000	50000	....	....	4000	10	35000	40	1500	....	....	....	200	....	....
2	Caraquet, New Bandon and part of Bathurst	302000	....	....	42000	20000	20000	20000	10	215000	220	46000	40	....	500	600	1000	22000
3	Shippegan, Inkerman and Saumarez	65000	8000	....	22000	....	....	25500	50	1101400	310	23300	35	....	500	1800	3170	17300
	Totals	442000	8500	15000	114000	20000	20000	49500	70	1351400	570	70800	75	....	1000	2600	4170	39300
	Northumberland County.																	
1	Neguac, &c	80000	....	....	6000	....	10000	2500	50	33600	50	960	....	....	....	100	150	1000
2	Bay du Vin, &c	114100	....	....	5000	....	20000	32000	50	75000	80	400	....	....	....	200	300	1000
3	Chatham, &c	90000	....	....	100	....	....	2000	....	....	....	50	....	....	....	....	....	....
4	South-west and North-west Miramichi Rivers	65000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	Totals	349100	....	....	11100	....	30000	36500	100	108600	130	1410	....	....	....	300	450	2000

	Kent County.																	
1	Richibucto, St. Louis and Carleton, &c	48000	800	1200	15600	20000	20000	300000	100	272500	175	1850	15	2600	350	1400	2300	1600
2	Buctouche and Cocagne	....	....	....	8000	70000	....	12000	10	141600	130	200	....	....	....	300	800	....
	Total	48000	800	1200	23600	90000	20000	312000	110	414100	305	2050	15	2600	350	1700	3100	1600
	Westmorland County.																	
1	Shediac, Moncton and Salisbury	1000	....	....	35000	....	20000	4000	....	150000	400	50	....	....	....	....	....	....
2	Botsford	....	....	....	12000	20000	20000	2000	....	250000	1000	50	....	....	....	....	....	....
3	Sackville and Westmorland	4500	....	....	2000	40000	4000	500	5	....	20	50	....	....	....	12	....	....
4	Dorchester	5500	....	....	100	....	....	....	....	....	....	10	....	....	....	....	....	....
	Totals	11000	....	....	49100	60000	44000	6500	5	400000	1420	160	....	....	....	12	....	....
	Albert County	5000	....	....	200	....	....	....	....	....	....	....	....	....	....	....	....	....
	Grand totals	1055100	9300	16200	200000	197000	114000	404900	285	2311500	2785	74460	90	2600	1350	4612	7720	42900

RETURN showing the Quantity and Value of Fish, &c.—New Brunswick—*Con.*

Number.	DISTRICTS.	KINDS OF FISH.																TOTAL VALUE.	Number.
		Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or gaspereaux brls.	Bass, lbs.	Clams, lbs.	Eels, brls.	Sardines, cans.	Oysters, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, lbs.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Restigouche County.																		
1	Above Dalhousie	18000	....	480000	..	....	....	50	....	....	50000	40000	..	10	....	....	....	44540	1
2	Below Dalhousie	2000	....	65000	..	..	....	10	....	....	2000	5000	..	....	....	800	1000	49638	2
	Totals	20000	....	545000	....	....	....	60	....	....	52000	45000	..	10	....	800	1000	94178	
	Gloucester County.																		
1	Beresford and part of Bathurst	5000	....	10000	....	2000	....	50	....	....	10000	4000	..	....	....	800	12000	241955	1
2	Caraquet, New Bandon and part of Bathurst	10000	..	730000	..	22000	1200	320	....	1710	50000	100000	..	....	16000	20900	18000	570290	2
3	Shippegan, Inkerman and Saumarez	10000	20	652000	2700	14000	300	340	....	20	5000	7000	..	200	10100	11500	9900	506665	3
	Totals	25000	20	1392000	2700	38000	1500	710	....	1730	65000	111000	..	200	26100	33200	39900	1318910	
	Northumberland County.																		
1	Neguac, &c	2000	60	680000	100	10000	100	40	....	1500	10000	20000	..	500	400	2000	2000	101880	1
2	Bay du Vin, &c	1000	400	605000	300	14000	50	50	....	65000	50000	50000	..	200	200	6000	5000	146020	2
3	Chatham, &c	3500	500	1200000	1300	45000	50	30	300000	4500	30000	1400000	..	....	....	....	2000	199790	3
4	South-west and North-west Miramichi Rivers	17000	850	....	1250	165000	..	200	....	...	....	....	..	..	...	....	...	46700	4
	Totals	23500	1810	2485000	2950	234000	200	320	300000	12500	90000	1470000	..	700	600	8000	9000	494390	

	Kent County.																		
1	Richibucto, St. Louis and Carleton	12200	160	980000	2600	14500	100	560	.. ..	600	26000	180000	30	350	1450	6900	3000	274248	1
2	Buctouche and Cocagne	4000	....	800000	1500	3000	500	200	.....	4600	....	90000	..	1000	500	3500	1000	145635	2
	Totals......................... .. .	16200	160	1780000	4100	17500	600	760	.....	5200	26000	270000	30	1350	1950	10400	4000	419883	
	Westmorland County.																		
1	Shediac, Moncton and Salisbury......... ...	8000	10	800000	1200	3000	300	100	....	200	....	10000	..	400	.....	15000	6000	248480	1
1	Botsford...	2000	....	140000	400	2000	100	40	......	200	......	10000	..	....	.....	12000	1000	133440	2
3	Sackville and Westmorland................	2000	400	130000	200	6000	20	30	....	5	....	2000	..	50	.	2000	500	25752	3
4	Dorchester...	1000	950	..... .	.	. .	....	....	....	.. .	.....	20000	..	...	100	..	.. ...	11270	4
	Totals..............................	13000	1360	1070000	1800	11000	420	170	....	405	. ..	24000	..	450	100	29000	7500	418942	
	Albert County in all......................	8000	200	.... ..	......	.....	100	50	....	....	.....	1000	..	...	...	..	..	5350	
	Grand totals.....	105700	3550	7272000	11550	300500	2820	2070	300000	19835	233000	1921000	30	2710	28750	81400	61400	2751653	

RECAPITULATION

Of the Yield and Value of the Fisheries in District No. 2, **New Brunswick,** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon, fresh	Lbs.	1,055,100	0 20	211,020 00
do in cans	“	9,300	0 15	1,395 00
do smoked	“	16,200	0 20	3,240 00
Herring, salted	Brls.	200,000	4 00	800,000 00
do fresh	Lbs.	197,000	0 01	1,970 00
do smoked	“	114,000	0 02	2,280 00
Mackerel	Brls.	285	15 00	4,275 00
do fresh	Lbs.	404,900	0 12	48,588 00
Lobsters, preserved	Cans.	2,311,500	0 20	462,300 00
do in shell	Cwt.	2,785	5 00	13,925 00
Cod	“	74,460	4 00	297,840 00
do tongues and sounds	Brls.	90	10 00	900 00
Haddock, fresh	Lbs	2,600	0 03	78 00
do	Cwt.	1,350	3 00	4,050 00
Hake	“	4,612	2 25	10,377 00
do sounds	Lbs.	7,720	0 50	3,860 00
Halibut	“	42,900	0 10	4,290 00
Trout	“	105,700	0 10	10,570 00
Shad	Brls.	3,550	10 00	35,500 00
Smelts	Lbs.	7,272,000	0 05	363,600 00
Alewives	Brls.	11,550	4 00	46,200 00
Bass	Lbs.	300,500	0 10	30,050 00
Clams	Brls.	2,820	2 00	5,640 00
Eels	“	2,070	10 00	20,700 00
Sardines	Cans.	300,000	0 05	15,000 00
Oysters	Brls.	19,835	4 00	79,340 00
Flounders	Lbs.	233,000	0 05	11,650 00
Frost fish	“	1,921,000	0 05	96,050 00
Squid	Brls.	30	4 00	120 00
Coarse fish	“	2,710	2 00	5,420 00
Fish oil	Galls.	28,750	0 30	8,625 00
Fish as bait	Brls.	81,400	1 50	122,100 00
do manure	“	61,400	0 50	30,700 00
Total				2,751,653 00

NUMBER and Value of Vessels, Boats, Nets, Traps, &c., engaged in the Fisheries in District No. 2, **New Brunswick**, in the Year 1897.

Material.	Value.	Total.
	$ cts.	$ cts.
223 vessels (2,545 tons)	94,490 00	
3,895 boats	114,150 00	
377,630 fathoms nets	229,660 00	
1 seine	200 00	
2 mackerel trap-nets	3,000 00	
40 trawls	825 00	
400 bass nets	2,000 00	
2,199 smelt nets	93,060 00	
2,025 hand lines	2,470 00	539,855 00
194 canneries	129,200 00	
185,820 lobster traps	167,660 00	296,860 00
116 freezers and ice-houses	46,075 00	
468 fish and smoke-houses	27,220 00	
55 piers and wharfs	10,000 00	
212 smacks and steamers	25,200 00	
960 smelt shanties	12,500 00	120,995 00
Total		957,710 00

NEW BRUNSWICK—District No. 3.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries; Quantity and Value of Fishing Materials; Kinds and Quantities of Fish, and the Total Number of Men employed, &c., in District No. 3, Province of **New Brunswick,** for the Year 1897.

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.					KINDS OF FISH.							Number.
		Vessels.				Boats.			Gill Nets.		Seines.										
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Number.	Fathoms.	Value.	Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, smoked, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	
	St. John County.			$			$			$			$								
1	St. John Harbour	2	31	620	10	195	8575	390	7855	5892	6	360	1080	45260	....	1600	450000	160	25	....	1
2	Dipper Harbour	8	120	3006	32	54	3240	108	4960	3720	5	200	400	41600	...	500	......	1600	150	3	2
3	Pisarinco	1	20	500	4	52	5200	104	36400	27300	...	....	....	97500	....	350	....	440	80	...	3
4	Musquash	1	30	1000	5	20	1200	40	18000	13500	12	480	960	31200	.....	200	......	400	75	1	4
5	St. Martin's and Martin's Head	....	....	....	...	30	1500	60	10500	7875	....	....	....	3900	......	250	....	1200	80	...	5
	Totals	12	201	5120	51	351	19715	702	77715	58287	23	1040	2440	219460	...	2900	450000	3800	410	4	
	Other Counties.																				
6	King's	....	....	....	....	160	6400	320	20000	15000	...	...	. .	29500	......	560	....	.....	......	...	6
7	Queen's	1	12	240	4	223	8500	446	30000	18000	...	. .	...	28720	.....	....	....	......	......	....	7
8	Sunbury	1	40	800	4	60	1200	120	10370	7775	...	....	....	2800	.....	....	5000	... .	......	....	8
9	York	....	....	....	....	100	2000	200	5200	3900	....	....	....	12000	. ..	....	....	......	......	....	9
10	Carleton	..	....	....	....	35	350	70	500	375	....	....	....	4000	......	....	....	....	....	....	10
11	Victoria	....	....	....	....	90	500	180	1500	750	....	....	....	3000	15	.... .	....	....	....	....	11
	Totals	2	52	1040	8	668	18950	1336	67570	45800	...	...	....	80020	15	560	5000	....	.....	....	
	Grand totals	14	253	6160	59	1019	38665	2037	145285	104087	23	1040	2440	299480	15	3460	455000	3800	410	4	

RETURN showing the Quantity and Value of Fish, &c.—**New Brunswick**—*Concluded.*

Number.	DISTRICTS.	KINDS OF FISH.																	TOTAL VALUE.		Number.
		Sturgeon, fresh, lbs.	Haddock, dried, cwt.	Smoked Finnan Haddies, lbs.	Hake, dried, cwt.	Pollock, cwt.	Smoked Alewives, lbs.	Trout, lbs.	Shad, brls.	Alewives or gaspereau, brls.	Bass, lbs.	Pickerel, lbs.	Eels, brls.	Sardines, brls.	Caviare, keg.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	$	cts.	
	St. John County.																				
1	St. John Harbour	....	3500	650000	30	10	30000	....	1000	15200	....	...	95	...	...	...	...	....	152,689	50	1
2	Dipper Harbour	...	1650	....	2400	175	....	...	....	..	....	....	....	...	...	....	72	....	29,671	60	2
3	Pisarinco	....	2800	....	1300	71	....	....	100	200	....	....	....	...	...	....	30	650	37,671	00	3
4	Musquash	....	175	....	110	60	....	....	25	100	....	....	....	1800	...	....	40	1500	15,854	50	4
5	St. Martin's and Martin's Head	....	300	....	850	140	....	....	....	....	....	....	....	1600	...	...	....	700	14,642	50	5
	Totals	....	8425	650000	4690	456	300000	....	1125	15500	..	...	95	3400	....	....	142	2850	250,529	10	
	Other Counties.																				
6	King's	20000	....	....	420	....	....	9000	....	310	2500	22000	25	...	17	230	290	....	15,367	00	6
7	Queen's	....	....	....	....	....	....	4150	650	1600	....	60000	50	...	....	90	....	....	22,739	00	7
8	Sunbury	....	....	....	....	....	....	3500	75	1650	....	24000	20	...	....	40	....	...	9,840	00	8
9	York	....	....	....	....	..	....	9000	230	20	....	6000	....	...	....	30	..	...	6,040	00	9
10	Carleton	....	....	....	....	....	....	15000	20	....	....	2500	10	...	....	25	....	...	2,775	00	10
11	Victoria	..	....	....	...	..	....	35000	30	....	....	....	....	..	....	140	..	....	4,905	00	11
	Totals	20000	....	....	420	..	...	75650	1005	3580	2500	114500	105	...	17	555	290	....	61,666	00	
	Grand totals	20000	8425	650000	5110	456	300000	75650	2130	19080	2500	114500	200	3400	17	555	432	2850	312,195	10	

RECAPITULATION

Of the Yield and Value of the Fisheries in District No. 3, **New Brunswick,** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon, salted	Brls.	15	15 00	225 00
do fresh	Lbs.	299,480	0 20	59,896 00
Herring, salted	Brls.	3,460	4 00	13,840 00
do smoked	Lbs.	455,000	0 02	9,100 00
Lobsters	Cwt.	3,800	5 00	19,000 00
Cod	"	410	4 00	1,640 00
" Tongues and sounds	Brls.	4	10 00	40 00
Sturgeon	Lbs.	20,000	0 07	1,400 00
Haddock	Cwt.	8,425	3 00	25,275 00
" finnan haddies	Lbs.	650,000	0 06	39,000 00
Hake	Cwt.	5,110	2 25	11,497 50
Pollock	"	456	2 00	912 00
Smoked alewives	Lbs.	300,000	0 02	6,000 00
Trout	"	75,650	0 10	7,565 00
Shad	Brls.	2,130	10 00	21,300 00
Alewives	"	19,080	4 00	76,320 00
Bass	Lbs.	2,500	0 10	250 00
Pickerel	"	111,500	0 05	5,725 00
Eels	Brls.	200	10 00	2,000 00
Sardines	"	3,400	1 50	5,100 00
Caviare	Kegs.	17	35 00	595 00
Coarse and mixed fish	Brls.	555	2 00	1,110 00
Fish oil	Galls.	432	0 30	129 60
Fish for bait	Brls.	2,850	1 50	4,275 00
Total		....	....	312,195 10

Number and Value of Vessels, Boats, Nets, Weirs, &c., engaged in the Fisheries of District No. 3, **New Brunswick,** for the Year 1897.

Material.	Value.	Total.
	$ cts.	$ cts.
14 vessels (253 tons)	6,160 00	
1,019 boats	38,665 00	
145,285 fathoms nets	104,087 00	
23 seines (1,040 fathoms)	2,440 00	
33 weirs	12,700 00	164,052 00
10,900 lobster traps	8,175 00	
47 ice-houses	8,350 00	
93 smoke and fish-houses	41,500 00	
100 trawls	2,500 00	
7 steamers and smacks	7,000 00	
70 wharfs and piers	38,200 00	
75 canoes	750 00	
		106,475 00
		270,527 00

RECAPITULATION by Counties showing the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of all Fishing Materials in the whole Province of **New Brunswick**, for the Year 1897.

Number.	Districts.	FISHING VESSELS AND BOATS.							FISHING GEAR OR MATERIAL.			LOBSTER PLANT.					OTHER FIXTURES USED IN FISHERIES.								Number.
		Vessels.				Boats.			Gill Nets.			Canneries.		Traps.		Number of hands employed.	Freezers and Ice Houses.		Smoke and Fish Houses.		Piers and Wharves.		Tugs, Steamers and Smacks.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
				$			$				$		$		$			$		$		$		$	
1	Restigouche	....	....	.	...	200	4000	390	130	26000	28000	1	1000	2260	2060	60	7	10000	80	1500	1	200	1	1500	1
2	Gloucester	215	2388	90100	690	1607	48250	3015	2290	118280	54700	59	46300	76860	69000	1545	52	5975	123	12470	23	7550	194	6600	2
3	Northumberland	7	137	3790	27	685	17700	1120	2750	125100	110360	9	12800	12200	12000	237	48	25600	137	10150	8	1200	15	7100	3
4	Kent	1	20	600	3	654	21200	1200	2816	56300	15800	55	26100	48400	42500	781	9	4500	18	1200	20	750	2	10000	4
5	Westmorland	....	....	.....	..	744	22800	1426	1167	51300	20600	70	43000	46100	42100	1203	....	..	110	1900	3	300	....	....	5
6	Albert	....	....	.....	...	5	200	10	6	650	200	....	..	..	....	....	....	......	....	.....	....	......	....	......	6
7	St. John	12	201	5120	51	351	19715	702	....	77715	58287	...	.....	10900	8175	....	30	6000	63	40000	70	38200	7	7000	7
8	King's	....	....	.. .	....	160	6400	320	....	20000	15000	....	......	......	......	...	9	1200	15	750	....	....	....	.....	8
9	Queen's	1	12	240	4	223	8500	446	....	30000	18000	....	......	. .	...	....	...	.....	....	.....	....	..	....	....	9
10	Sunbury	1	40	800	4	60	1200	120	...	10370	7775	....	. .	.. .	.. ...	....	3	400	15	750	....	.. ..	....	.....	10
11	York	....	....	.. ..	....	100	2000	200	....	5200	3900	....	....	......	......	....	5	750	....	. ..	....	......	....	. ...	11
12	Carleton	....	....	.....	....	35	350	70	...	500	375	....	......	.. ..	..	....	....	......	....	......	....	......	....	. ..	12
13	Victoria	....	....	... ..	....	90	500	180	....	1500	750	....	... .		......	....	....	......	....	.....	....	......	...	...	
14	Charlotte	56	1085	23450	279	1095	84417	1287	672	28902	7796	7	15000	24192	19470	....	7	19000	776	158185	246	52280	10	5275	
	Totals	293	3883	124100	1085	6009	237232	10486	9831	551817	341543	201	144200	220912	195305	3826	170	73425	1337	206905	371	100480	229	37475	13 4

RECAPITULATION by Counties showing the Kinds, Quantities and Values of Fish, &c.—**New Brunswick**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.																			Number.
		Salmon, fresh, lbs.	Salmon, preserved in cans, lbs.	Salmon, smoked, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Smoked finnan haddies, lbs.	Hake, dried, cwt.	Hake sounds, lbs.	Pollock, cwt.	Halibut, lbs.	
1	Restigouche	200000	....	....	2000	27000	....	400	....	37400	360	40	....	....	....	....	....	4170	....	....	1
2	Gloucester	44200	8500	15000	114000	20000	20000	49500	70	1351400	570	70800	75	....	1000	....	2600	4170	....	39300	2
3	Northumberland	349100	....	....	11100	....	30000	36500	100	108600	130	1410	....	....	....	....	300	450	....	2000	3
4	Kent	48000	800	1200	23600	90000	20000	312000	110	414100	305	2050	15	2600	350	....	1700	3100	....	1600	4
5	Westmorland	11000	....	....	49100	60000	44000	6500	5	400000	1420	160	....	....	....	....	12	....	....	....	5
6	Albert	5000	....	....	200	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6
7	St. John	219460	....	....	2900	....	450000	....	....	....	3800	410	4	....	8425	650000	4690	....	456	....	7
8	King's	29500	....	....	560	....	....	....	....	....	....	....	....	....	....	....	420	....	....	....	8
9	Queen's	28720	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9
10	Sunbury	2800	....	....	....	....	5000	....	....	....	....	....	....	....	....	....	....	....	....	....	10
11	York	12000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11
12	Carleton	4000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12
13	Victoria	3000	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	13
14	Charlotte	600	....	....	7906	8002500	6593760	....	49	101904	15470	6713	..	743000	3492	110800	17988	17057	12133	83000	14
	Totals	1355180	9300	16200	211366	8199500	7162760	404900	334	2413404	22055	81583	94	745600	13267	760800	27710	24777	12589	125900	

RECAPITULATION by Counties showing the Kinds, Quantities and Values of Fish, &c.—**New Brunswick**—*Concluded.*

Number.	Districts.	Kinds of Fish.																	Total Value.		Number.
		Trout, lbs.	Shad, brls.	Smelts, lbs.	Alewives or gaspereau, brls.	Bass, lbs.	Clams, lbs.	Eels, brls.	Sardines, cans.	Oysters, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Pickerel, lbs.	$	cts.	
1	Restigouche	20000		545000				60			52000	45000		10		800	100		94,178	00	1
2	Gloucester	25000	20	1392000	2700	38000	1500	710		1730	65000	111000		200	26100	33200	39900		1,318,910	00	2
3	Northumberland	23500	1810	2485000	2950	234000	200	320	300000	12500	90000	1470000		700	600	8000	9000		494,390	00	3
4	Kent	16200	160	1780000	4100	17500	600	760		5200	26000	270000	30	1350	1950	10400	4000		419,883	00	4
5	Westmorland	13000	1360	1070000	1800	11000	420	170		405		24000		450	100	29000	7500		418,942	00	5
6	Albert	8000	200				100	50				1000							5,350	00	6
7	St. John		1125		15500			95							142	2850			250,529	10	7
8	King's	9000			310	2500		25						230	290			22000	15,367	00	8
9	Queen's	4150	650		1600			50						90				60000	22,739	00	9
10	Sunbury	3500	75		1650			20						40				24000	9,840	00	10
11	York	9000	230		20									30				6000	6,040	00	11
12	Carleton	15000	20					10						25				2500	2,775	00	12
13	Victoria	35000	30											140					4,905	00	13
14	Charlotte	15000	40	6350	260				507600		46900	1912	673	200	29540	6459	5000	3504	870,287	30	14
	Totals	196350	5720	7278350	30890	303000	2820	2270	807600	19835	279900	1922912	703	3465	58722	90709	66400	118004	3,934,135	40	

In No.	7	include	300,000 lbs. smoked alewives,	valued at	$6,000
do	7	do	3,400 sardines	do	5,100
do	8	do	200,000 lbs. sturgeon	do	1,400
do	8	do	17 kegs caviare	do	595
do	14	do	12,000 cans scallops	do	1,800
do	14	do	376 brls. do	do	940
do	14	do	36,720 canned clams	do	3,672
do	14	do	1,676 brls. shelled clams	do	11,732
do	14	do	2 seal skins	do	
do	14	do	153,398 brls. sardines	do	306,796
do	13	do	15 brls. salted salmon	do	225

RECAPITULATION

OF the Yield and Value of the Fisheries of the whole Province of **New Brunswick** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.	Total Value.
			$ cts.	$ cts.	$ cts.
Salmon, fresh	Lbs.	1,355,180	0 20	271,036 00	
do preserved, in cans	“	9,300	0 15	1,395 00	
do salted	Brls.	15	15 00	225 00	
do smoked	Lbs.	16,200	0 20	3,240 00	275,896 00
Herring, salted	Brls.	211,366	4 00	845,464 00	
do fresh	Lbs.	8,199,500	0 01	81,995 00	
do smoked	“	7,162,760	0 02	143,255 20	1,070,714 20
Mackerel, salted	Brls.	334	15 00	5,010 00	
do fresh	Lbs.	404,900	0 12	48,588 00	53,598 00
Lobsters, preserved, in cans	Lbs.	2,413,404	0 20	482,680 80	
do fresh or alive	Cwt.	22,055	5 00	110,275 00	592,955 80
Cod, dried	“	81,583	4 00	326,332 00	
do tongues and sounds	Brls.	94	10 00	940 00	327,272 00
Hake, dried	Cwt.	27,710	2 25	62,347 50	
do sounds	Lbs.	24,777	0 50	12,388 50	74,736 00
Haddock, dried	Cwt.	13,267	3 00	39,801 00	
do smoked, finnan haddies	Lbs.	760,800	0 06	45,648 00	
do fresh	“	745,600	0 03	22,368 00	107,817 00
Pollock, dried	Cwt.	12,589	2 00		25,178 00
Halibut, fresh	Lbs.	125,900	0 10		12,590 00
Trout	“	196,350	0 10		19,635 00
Smelts	“	7,278,350	0 05		363,917 50
Bass	“	303,000	0 10		30,300 00
Alewives, salted	Brls.	30,890	4 00	123,560 00	
do smoked	Lbs.	300,000	0 02	6,000 00	129,560 00
Shad, salted	Brls.	5,720	10 00		57,200 00
Eels, salted	“	2,270	10 00		22,700 00
Squid	“	703	4 00		2,812 00
Sardines	“	156,798		311,896 00	
do preserved in oil	Cans.	807,600	0 05	40,380 00	352,276 00
Pickerel	Lbs.	118,004	0 05		5,900 20
Flounders	“	279,900	0 05		13,995 00
Frost fish or tom cods	“	1,922,912	0 05		96,145 60
Oysters	Brls.	19,835	4 00		79,340 00
Clams	“	4,496		17,372 00	
do canned	Cans.	36,720	0 10	3,672 00	21,044 00
Scallops	Lbs.	87,200			2,740 00
Sturgeon	“	20,000	0 07	1,400 00	
do caviare	“	1,700	0 35	595 00	1,995 00
Coarse and mixed fish	Brls.	3,465	2 00		6,930 00
Seal skins	No.	2	4 00		8 00
Fish oils	Galls.	58,722	0 30		17,616 60
do as bait	Brls.	90,709	1 50		136,063 50
do as manure	“	66,400	0 50		33,200 00
Total for 1897					3,934,135 40

RECAPITULATION of the Number and Value of Vessels, Boats, Nets, &c., engaged in the Fisheries of the whole Province of **New Brunswick**, with approximate value of other fishing material, 1897.

Articles.	Value.	Total.
	$ cts.	$ cts.
295 fishing vessels (3,883 tons) (1,085 men)	124,100 00	
6,009 do boats (10,486 men)	237,232 00	
551,817 fathoms of gill-nets	341,543 00	
290 seines (9,968 fathoms)	21,110 00	
289 weirs	130,725 00	
2,225 smelt nets	93,330 00	
400 bass nets	2,000 00	
2 trap-nets	3,000 00	
3,608 hand lines	2,852 65	
1,116 trawls	9,392 00	
		965,284 65
201 lobster canneries (6,105 men)	144,200 00	
220,912 do traps, &c.	195,305 00	
		339,505 00
2 sardine canneries	3,000 00	
1 fish-curing factory	3,500 00	
960 smelt shanties	12,500 00	
30 fish-presses	5,000 00	
170 freezers or ice-houses	73,425 00	
1,337 smoke-houses	206,905 00	
229 steamers and smacks	37,475 00	
80 scows	4,000 00	
50 pile drivers	500 00	
1 guano factory	5,000 00	
371 fishing piers and wharfs	100,480 00	
75 canoes	750 00	
		450,535 00
Total		1,755,324 65

APPENDIX No. 5.

PRINCE EDWARD ISLAND.

REPORT ON THE FISHERIES OF PRINCE EDWARD ISLAND FOR 1897, BY INSPECTOR OF FISHERIES J. A. MATHESON.

CHARLOTTETOWN, P.E.I., 2nd January, 1898.

Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to transmit herewith statistics of the fisheries of the Province of Prince Edward Island, for the season of 1897, showing the various kinds of fish and fish products taken in each fishing district of the three counties, and showing an aggregate catch and value at official rates of $954,949.45, a decrease of $21,176.36, wholly confined to the counties of King's and Queen's.

MACKEREL.

Mackerel fishing commenced about the first week in July. I have to report an unusually small catch, in fact, in Prince and Queen's counties, hook and line fishing was a complete failure, even those equipped with nets were poorly rewarded for their labour. Many who formerly were engaged in the business, have almost entirely abandoned it. Many reasons are assigned why the mackerel have not returned to the waters of this province. Net fishing is supposed to be the great cause of the scarcity, as nets are used at a time when the fish come on our coast to spawn. The fish therefore being caught before spawning, thousands of barrels are destroyed annually, and the main body of fish are driven from their spawning resorts.

HERRING.

This fishing commences as soon as the ice moves off our shores. The success of the fishing has an important bearing on the profits of the lobster packers, as the herring are principally used by them, providing them at a small cost with an abundance of bait which otherwise would have to be secured elsewhere. Sufficient attention is not paid to the fall fishing; the herring visiting our shores in the months of August and September are large and of excellent quality, but are altogether neglected by our fishermen. The spring catch was about the average of former years.

LOBSTERS.

This branch of the industry brings the fishermen the earliest compensation. This season the ice did not appear heavy in April, and many of the packers ran their lines then, but the ice again returned carrying away a large number of lines and traps, causing much loss to those engaged in the business. There can be no denying the fact that lobsters have been over-fished, and there being insufficient restrictions as to size or sex has been a great cause of their being now so small. Fishermen make their traps so close that a lobster of any size once into the trap cannot escape. From all information given by experts, lobsters do not spawn till a certain age, and consequently must be a certain size before spawning, but as they have been and are now taken under the spawning size, in a very short time there will be but few of the larger fish left to propagate. If the department would supply incubators to packers in localities where they could be used, I have no doubt but that the fishermen and packers would use their endeavours to have the spawn removed from the lobsters and placed in the incubators, and this would be a means of protecting the industry. When packing first commenced on the island an average of two and one-half lobsters would make a pound can of fish; now it takes from seven to ten to make a pound. Had not an extension been granted this season, the catch would have been much smaller, especially in Egmont Bay. If the department could regulate a full season of, say from four to six weeks, from the 15th of August to the 1st of October for that locality, it would be more advantageous to the packers and fishermen, as the fish are scarce in May and June, and in July and first part of August they are scarcely fit for human food. This change of season would apply to some other parts of the island as well.

COD.

The most reliable fishing in the island waters is undoubtedly the cod, but various causes combine to prevent its being carried on to the extent it should be. For the last two years owing to the scarcity of mackerel for bait and the poor demand for codfish, the fishing has not been followed with the usual vigour or profit of former years, in fact, our young men who have been following the mackerel fishing have not the experience nor are they anxious to expose themselves to the hardships necessary to make cod fishing a success, although they see a fleet of one hundred sail coming to our north shore year by year and prosecuting the cod fishing successfully, taking home to New Brunswick large quantities of cod and hake which ought to appear in the product of this province. It is no uncommon sight to see a hundred sails of Caraquet and other New Brunswick boats running into our northern harbours for shelter; these boats are large, strong and well equipped, and fish about ten miles off the north cape. With more energy and better boats, the large quantity of fish taken away by these New Brunswickers should go to our island fishermen.

HAKE.

The hake fishing has largely fallen off for the last two seasons, principally owing to rough weather and the scarcity of bait.

OYSTERS.

Oysters have suffered for a long time of over-fishing and also from the digging of mussel mud by farmers from the river bottoms and shallow estuaries. The feud between the oyster fishers and the farmers continues, and as this is mainly an agricultural province the weight of public sentiment has preponderated for the latter. Arrangements are now in progress by which both parties will be satisfied. With but few exceptions, the oyster beds in Prince Edward Island waters were all natural beds, owing their existence to the drift of the spat with the tides. Not being destitute of natural enemies, such as star-fish, etc., the oysters are not abundant. The principal locality is Richmond Bay. In this large shallow bay, situated about the centre of the island and nearly dividing it in two, the bottom is hard sand, covered with a coating of black mud, very valuable as a fertilizer, produced by the wash of the sea. This mud is dug into ruthlessly by the farmers living for miles along the banks, regardless of the destruction of the oysters, which pave part of the sea bottom. The bay is in the nature of a little Klondike to all those employed in the business who with no capital except a dory and a rake, can earn from one to four dollars per day, all they can land being bought by traders who ship to Montreal and other cities of Canada. Some of the fishermen use drags, thus further digging up and destroying the foundations of the beds. Another most destructive practice, which is being stopped, is the winter fishing through the ice. It is almost impossible to estimate how many immature oysters from the size of a five-cent piece to half-a-dollar, adhering to every merchantable oyster, are destroyed by a few minutes' exposure to the frozen surface.

There are other beds in Grand River, Pownal and other rivers in West Prince, and one or two others in Queen's County, but none in King's County. There are almost unlimited chances in either county for artificial planting, and on these must the future oyster-fishing of Prince Edward Island depend, for if the hap-hazard and reckless way in which it is now pursued, is continued, the whole fishing grounds bid fair to be exterminated. Although the applicants for areas for cultivation have not been, nor are yet, as numerous as might have been expected, the lessees of areas appear to be fulfilling their engagements and good results are expected.

For the better protection of this important industry, I would recommend that the spring fishing be prohibited, and that the open season commence on the first of October. I am satisfied that the suggestion will meet with the approval of the fishermen and those engaged in the business generally.

SMELTS.

There was about an average catch. Those engaged in the industry have not met with the success of our New Brunswick neighbours, owing principally to the fish not being so plentiful, extra cost of shipping and the uncertainty of getting the fish to market in good condition.

TROUT.

They are not fished for export, but are principally taken by sportsmen who wish a day's recreation. An extra effort was made this year to protect the trout in the Morell River, which no doubt will show good results for the coming seasons.

SALMON.

Our salmon fishing is principally confined to King's County and shows an increase over last year. A good deal of money has been expended at Dunk River in Prince County, in protecting this industry and very little, if any, good appears to have been derived from it, as it appears to be impossible to prevent poaching being carried on to a great extent.

SYNOPSIS OF OVERSEERS' REPORTS.

Overseer Davison of Prince County, reports as follows: Oyster fishing is carried on in Lot 10 River, Cascumpec Bay, Sheep River, Richmond Bay, Grand River, Malpeque Bay, Indian River and Bedeque Bay. There are about five hundred and twenty boats engaged in this fishing, averaging two men to a boat. The fishermen use tongs with handles from fifteen to twenty-four feet long, according to the depth of water, the longest being used in Richmond Bay. Very few oysters have been taken in Bedeque Bay for a number of years until last season six boats were engaged and averaged about twenty barrels to the boat, the oysters being of excellent quality.

Overseer Hobkirk of Charlottetown, reports a large increase in cod and hake with low prices, a decrease in mackerel and in lobsters, through being over-fished, and a decrease in oysters. He accounts for the shortage by North River reserves being removed in 1896 and about two thousand barrels being taken out, and suggests that Seal and Clyde rivers be closed for two years. There were in Queen's County twenty-six suits for illegal fishing, most of them for the violation of the lobster fishery. Five seizures of canned lobsters were also made, two of which were returned as it was proven that they were legally caught; the other three lots were sold by auction.

MARKETS.

The product of the fisheries, disposed of, about as follows:—

Herring, all for bait and home consumption.

Mackerel, 95 per cent sold in the United States. Five per cent sold in Canada.

Lobsters, 60 per cent sold in Europe. Thirty per cent sold in United States. Ten per cent sold in Canada.

Cod, 50 per cent for home consumption. Fifty per cent sold in Canada.

Hake, 75 per cent for home consumption. Twenty-five per cent sold in Canada.

Haddock. All for home consumption.

Smelts, 85 per cent sold in United States. Ten per cent sold in Canada. Five per cent for home consumption.

I have the honour to be, sir,

Your obedient servant,

J. A. MATHESON,
Inspector of Fisheries.

PRINCE EDWARD ISLAND.

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of all Fishing Materials employed in the Fishery Industry, and the Kinds and Quantity of Fish and Fish Products of the Province of **Prince Edward Island**, for the Year 1897.

Number.	Districts.	Fishing Vessels and Boats.							Fishing Gear or Materials.									Kinds of Fish.					Number.
		Vessels.				Boats.			Gill Nets.			Trawls.		Smelt Nets		Hand Lines.							
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Salmon, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	
	King's County.			$			$				$		$		$		$						
1	Souris and Red Point	2	35	500	8	110	2000	150	250	5000	1650	100	1500	...	...	100	100	...	2000	50000	40	40	1
2	Bay Fortune	...	...	...	...	53	1000	75	200	4000	1200	15	150	5	125	50	50	...	1800	20000	.	55	2
3	Annandale	...	...	...	...	130	3000	350	300	6000	2000	30	300	2	50	250	250	...	3600	...	...	75	3
4	Georgetown	1	30	650	5	40	1200	80	150	3000	1000	20	250	...	...	40	40	...	2000	50000	...	40	4
5	Murray Harbour, North	4	180	3200	16	82	3930	164	220	4290	1200	50	500	...	...	100	100	...	2062	114700	...	62	5
6	Murray Harbour, South	10	250	7500	50	100	1900	200	224	4985	1500	100	1000	...	...	200	200	...	2500	...	...	20	6
7	Morell and St. Peter's	1	30	650	5	95	2600	300	700	14000	4800	30	300	6	120	250	250	5000	3200	...	...	160	7
8	Naufrage	...	...	...	...	55	550	110	175	3500	1200	15	150	...	...	110	110	...	1200	...	...	250	8
9	North Lake	...	...	...	...	63	900	158	220	4500	1400	15	175	...	...	200	200	...	1000	...	...	315	9
10	East Lake	...	...	...	...	25	375	50	125	2500	800	12	150	...	...	50	50	...	800	...	...	150	10
	Totals	18	525	12500	84	753	17455	1637	2564	51775	16750	387	4475	13	295	1350	1350	5000	20162	234700	40	1167	
	Values $	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	1000	80648	2347	5	17505	

RETURN showing the Kinds and Quantities of Fish and Fish Products, &c.—Prince Edward Island—*Continued.*

Number.	Districts.	Kinds of Fish.														Fish Products.				Total Value.	Number.
		Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake sounds, lbs.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux brls.	Eels, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oils, galls.	Fish as bait, brls.	Fish as manure, brls.	Fish guano, tons.	$ cts.	
	King's County.																				
1	Souris and Red Point...	54288	2300	20	100	2000	4000	2000	1500	400	.....	8	3000	100	50	2500	1500	500	70	40,582 40	1
2	Bay Fortune............	47312	1150	10	50	1300	2500	500	3000	2000	.....	5	2000	50	20	1200	500	.. ..	40	28,702 40	2
3	Annandale.............	134784	650	. . .	20	500	1000	....	3000	3473	....	5	2500	120	25	500	2000	.....	250	51,345 45	3
4	Georgetown............	78100	400	5	....	300	600	....	....	....	...	....	3000	20	....	300	1000	.....	75	29,240 00	4
5	Murray Harbour, North.	77376	450	....	....	400	800	..	1000	....	.....	5	5350	25	.....	600	1200	...	75	31,472 70	5
6	Murray Harbour, South.	124656	1500	10	....	2500	5000	....	....	....	...	...	3000	.....		1500	2000	.....	100	53,156 20	6
7	Morell and St. Peter's...	114864	1700	20	300	300	600	....	7000	10000	....	100	3000	50	20	1200	2500	....	100	54,847 80	7
8	Naufrage..............	49632	800	...	100	100	200	.	4000	....	......	6	3500	25	10	500	1000	.....	75	24,781 40	8
9	North Lake............	43248	750	....	50	100	200	1000	3000	1000	150	15	2500	30	5	350	600	....	50	23,359 60	9
10	East Lake.	50976	600	....	75	50	100	500	2500	500	25	5	2000	20	. .	300	550	....	50	20,052 70	10
	Totals...... ...	775236	10300	65	695	7550	15000	4000	25000	17373	175	149	29850	440	130	8950	12850	500	885	.... .	
	Values....... $	155047	41200	650	2085	16988	7500	400	2500	869	700	1490	1492	1760	260	2685	19275	250	885	357,540 65	

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of all Fishing Materials, &c.— Prince Edward Island—*Continued.*

		FISHING VESSELS AND BOATS.							FISHING MATERIALS.												
	DISTRICTS.	Vessels.				Boats.			Gill Nets.			Seines.			Trawls.		Smelt Nets.		Hand Lines.		
Number.		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.
	Queen's County.			$			$				$			$		$		$		$	
1	Tracadie	1	18	250	5	67	2010	114	110	4500	1200	....	....	....	20	500	25	650	....	....	1
2	New London	....	....	....	....	23	1500	75	....	2840	850	4	750	700	7	140	....	....	....	....	2
3	Point Prim	....	....	....	....	51	1020	11	11	205	42	....	....	....	12	120	3	150	11	5	3
4	Rustico	3	53	2000	20	50	1250	150	80	1550	300	10	1500	2000	13	260	15	300	510	102	4
5	Wheatley River	....	....	....	....	3	120	14	....	200	40	....	....	....	....	....	....	....	....	....	5
6	Pownal	....	....	....	....	35	275	70	....	....	....	....	....	....	....	....	....	....	....	....	6
7	Charlottetown	....	....	....	....	15	225	20	....	....	....	....	....	....	....	....	7	210	....	....	7
8	Crapaud	....	....	....	....	30	900	45	....	....	....	....	....	....	....	....	7	230	....	....	8
9	Lot 65	....	....	....	....	70	1400	140	....	....	....	....	....	....	....	....	20	600	....	....	9
10	Bays and rivers	1	16	400	5	10	100	15	20	400	100	....	....	....	....	....	6	180	....	....	10
11	Cove Head	....	....	....	....	20	250	35	....	....	....	....	....	....	....	....	....	....	....	....	11
	Total	5	87	2650	30	374	9050	689	221	9695	2532	14	2250	2700	52	1020	83	2320	521	107	
	Values $	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	

RETURN showing the Kinds and Quantities of Fish and Fish Products, &c.—**Prince Edward Island**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.																FISH PRODUCTS.		TOTAL VALUE.	Number.
		Herring, salted, brls.	Herring, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved, in cans, lbs.	Cod, dried, cwt.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Oysters, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.		
	Queen's County.																			$ cts.	
1	Tracadie	800	18000	91	72000	1600	5000	...	...	...	...	50000	400	...	1200	...	...	500	...	34,745 00	1
2	New London	25	...	100	81200	400	...	20	20	1000	200	...	10	15	100	..	...	100	1200	22,085 00	2
3	Point Prim	...	...	...	63993	160	...	...	500	...	300	5000	...	1000	..	...	...	...	...	24,843 60	3
4	Rustico	2000	...	30	61000	2000	...	..	...	...	...	10000	...	5	...	...	500	700	...	31,410 00	4
5	Wheatley River	150	...	...	...	800	100	...	...	...	250	...	...	30	...	...	40	...	...	14,262 40	5
6	Pownal	...	...	.	21312	..	...	...	...	...	...	...	...	...	2500	..	...	...	...	4,288 00	6
7	Charlottetown	.	...	...	...	...	...	...	...	...	500	10000	...	...	1000	..	...	...	...	4,550 00	7
8	Crapaud	300	...	5	80000	...	...	...	...	...	...	20000	.	...	...	2000	...	...	450	19.030 00	8
9	Lot 65	...	...	...	100000	..	...	..	..	...	...	...	...	...	...	...	...	...	...	20,000 00	9
10	Bays and rivers	350	...	...	...	..	...	...	...	...	5000	200000	200	200	3000	...	...	...	...	26,700 00	10
11	Cove Head	100	...	...	28500	200	...	...	...	...	...	...	.	...	...	...	...	...	...	6,900 00	11
	Totals	3725	18000	226	508005	5160	5100	20	520	1000	6250	295000	610	1250	7800	2000	540	1300	1650	...	
	Values $	14900	180	3390	101601	20640	153	60	1170	100	625	14750	2440	12500	31200	100	2160	390	2475	208,834 00	

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Quantity and Value of all Fishing Materials, &c.—

Prince Edward Island—*Continued.*

	Districts.	Fishing Vessels and Boats.							Fishing Materials.														
		Vessels.				Boats.			Gill-Nets.			Seines.			Trap Nets.		Trawls.		Smelt Nets		Hand Lines.		
Number.		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.
	Prince County.			$			$				$			$		$		$		$		$	
1	Tignish					84	2520	168	77	1601	532				1	1000							1
2	Alberton	1	64	1500	10	26	1120	76	90	1950	735	2	400	1000					12	290			2
3	Lot 11					29	1160	50	54	1880	224								10	300			3
4	Narrows					20	1300	70	103	1100	325								2	60	100	35	4
5	Grand River	1	20	500	4	2	80	7	4	130	65								8	160	8	4	5
6	Richmond Bay	1	10	300	3	100	3000	220													14	3	6
7	Summerside																		14	210			7
8	Travellers' Rest					100	2000	200	4	60	24								10	200	6	3	8
9	Carlton					19	635	31	27	838	170								16	320			9
10	Tryon					43	1240	69	48	1004	210								1	20			10
11	Malpeque					86	2970	227	50	2000	1000	1	120	300					12	300	100	50	11
12	Egmont Bay					90	3180	186	112	2557	539												12
13	Brae and West Point					90	3150	270	200	1600	800								1	25	300	60	13
14	Miminigash					51	2532	103	300	3955	1303	1	700	238	1	200	2	407			1300	300	14
15	Nail Pond					97	3525	184	460	4620	410												15
16	Skinners' Pond					48	1125	96	66	1230	577						3	60					16
17	Brae to Higgins' Wharf					14	700	28	50	1000	100								8	210			17
18	Rivers of Lots 5 and 6	1	16	300	6	6	315	11	12	262	57								3	95	31	12	18
	Totals	4	110	2600	23	905	30552	1996	1657	24787	7071	4	1220	1538	2	1200	5	467	97	2190	1859	467	

RETURN showing the Kinds and Quantities of Fish and Fish Products, &c.—**Prince Edward Island**—*Continued.*

Number.	DISTRICTS.	KINDS OF FISH.																	FISH PRODUCTS.			TOTAL VALUE.	Number.
		Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Tongues & sounds, brls.	Hake, dried, cwt.	Hake sounds, lbs.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Oysters, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Prince County.																						
1	Tignish				10000	50	250080	800		500	4500								250		2025	59,628 50	1
2	Alberton						39526							10000						470		9,110 20	2
3	Lot 11						52300							15000						520		11,990 00	3
4	Narrows	500					48000	800		50		100					1100		75	1800		22,045 00	4
5	Grand River	630					17520	80	1½					8400			1725		65	405		14,306 00	5
6	Richmond Bay	300	15000			33		180	1	40				120		10	3900		40	200	45	18,705 50	6
7	Summerside	20												40000		5	40					2,290 00	7
8	Travellers' Rest	16					2400	40						36000		33	5000			50		22,909 00	8
9	Carleton						49432							26650			40			1035		12,931 40	9
10	Tryon	845					89952							4000	10					971		23,066 90	10
11	Malpeque	500					26720	1000						48000		50	1060		300	400		19,174 00	11
12	Egmont Bay	500					267079													3998		61,412 80	12
13	Brae and West Point	200				215	55200													3750	800	21,090 00	13
14	Miminigash	300			4800	123	35712	468		448	948		500	12000		6		30	805	1500		17,378 90	14
15	Nail Pond	100				154	161592	230			250								174	860		37,415 60	15
16	Skinner's Pond	300	274		1248	8	66528	600		700	135								94	900		20,198 80	16
17	Brae to Higgins' Wharf	200					21400	300		200				16000	12	4	120			200		8,398 00	17
18	Rivers of Lots 5 and 6	66		400				394		80				70000	3	40	130		64	30		6,524 20	18
	Totals	4477	15274	400	16048	583	1183441	4892	2½	2018	5833	100	500	286170	25	148	13115	30	1867	17089	2870		
	Value $	17908	153	8	1926	8745	236688	19568	25	4540	2917	10	50	14309	100	1480	52460	60	560	2563	1435	388,574 80	

Recapitulation by Counties showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Fishing Material, &c.—**Prince Edward Island**—*Continued.*

Number.	Districts.	Fishing Vessels and Boats.							Fishing Material.																	Kinds of Fish.				Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.		Dip Nets.		Smelt Nets.		Hand Line							
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Salmon, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	
				$			$				$			$		$		$		$		$		$					
1	King's County	18	525	12500	84	753	17455	1637	2564	51775	16750	..	...	....	120	240	387	4475	90	165	13	295	1350	1350	5000	20162	234700	....	1
2	Queen's County	5	87	2650	30	374	9050	689	221	9695	2532	14	2250	2700	. .	....	52	1020	..	....	83	2320	521	107	....	3725	18000	....	2
3	Prince County	4	110	2600	23	905	30552	1996	1657	24787	7071	4	1220	1538	2	1200	5	467	..	....	97	2190	1859	467	....	4477	15274	400	3
	Totals	27	722	17750	137	2032	57057	4322	4442	86257	26353	18	3470	4238	122	1440	444	5962	90	165	193	4805	3730	1924	5000	28364	267974	400	

Return showing the Quantity and Value of Fish, &c.—**Prince Edward Island**—*Continued.*

Number.	Districts.	Kinds of Fish.																		Fish Products.				Total Value.		Number.
		Mackerel, fresh, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Hake, sounds, lbs.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Alewives or gaspereaux, brls.	Eels, brls.	Oysters, brls.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Fish guano, tons.	$	cts.	
1	King's County....	40	1167	775236	10300	65	....	695	7550	15000	4000	25000	17373	175	149	.....	29850	440	130	8950	12850	500	885	357,540	65	1
2	Queen's County...	.. .	226	508005	5160	....	5100	20	520	.....	1000	6250	295000	610	1250	7800	2000	540	...	1300	1650	...	....	208,834	00	2
3	Prince County ..	16048	583	1183441	4892	2½	....	....	2018	5833	100	500	286170	25	148	13115	. .	....	30	1867	17089	2870	....	388,574	80	3
	Totals.......	16088	1976	2466682	20352	67½	5100	715	10088	20833	5100	31750	598543	810	1547	20915	31850	980	160	12117	31589	3370	885	954,949	45	

RECAPITULATION

Showing Yield and Value of the different Fisheries in the Province of **Prince Edward Island** during the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon	Lbs.	5,000	0 20	1,000 00
Herring, salted	Brls.	28,364	4 00	113,456 00
" fresh	Lbs.	267,974	0 01	2,679 74
" smoked	"	400	0 02	8 00
Mackerel, salted	Brls.	1,976	15 00	29,640 00
" fresh	Lbs.	16,088	0 12	1,930 56
Lobsters, preserved in cans	"	2,466,682	0 20	493,336 40
Cod, dried	Cwt.	20,352	4 00	81,408 00
" tongues and sounds	Brls.	67½	10 00	675 00
Haddock, fresh	Lbs.	5,100	0 03	153 00
" dried	Cwt.	715	3 00	2,145 00
Hake, dried,	"	10,088	2 25	22,698 00
" sounds	Lbs.	20,883	0 50	10,416 50
Halibut	"	5,100	0 10	510 00
Trout	"	31,750	0 10	3,175 00
Smelts	"	598,543	0 05	29,927 15
Alwives, salted	Brls.	810	4 00	3,240 00
Eels	"	1,547	10 00	15,470 00
Oysters	"	20,915	4 00	83,660 00
Tom cod	Lbs.	31,850	0 05	1,592 50
Squid	Brls.	980	4 00	3,920 00
Coarse and mixed fish	"	160	2 00	320 00
Fish oil	Galls.	12,117	0 30	3,635 10
" as bait	Brls.	31,589	1 50	47,383 50
" as manure	"	3,370	0 50	1,685 00
" guano	Tons.	885	1 00	885 00
Total for 1897				954,949 45
Total for 1896				976,125 81
Decrease				21,176 36

RECAPITULATION

SHOWING the Number and Values of Vessels, Boats, Nets, Lobster Canneries, Traps, &c., engaged in the Fisheries of the Province of **Prince Edward Island**, Season of 1897.

Number.	Articles.	Value.	Total Value.
		$	$
27	Vessels, 722 tons	17,750	
2,032	Boats	57,057	
4,442	Gill nets, 86,257 fathoms	26,353	
2	Trap nets	1,200	
120	Trap nets for perch	240	
18	Seines, 3,470 fathoms	4,238	
444	Trawls	5,962	
90	Dip nets	165	
193	Smelt nets	4,805	
3,730	Hand lines	1,924	119,694
220	Lobster canneries	118,613	
216,133	Lobster traps	124,409	243,022
45	Smoke and fish houses	1,760	
29	Piers and wharfs	21,680	23,440
	Total value		386,156

STATEMENT of the Lobster Plant, &c., in **Prince Edward Island**, for the Season of 1897.

Counties.	Lobster Plant.				Number of Hands employed.	Other Fixtures used in Fishing.			
	Traps.		Canneries.			Smoke and Fish Houses.		Piers and Wharfs.	
	Number.	Value.	Number.	Value.		Number.	Value.	Number.	Value.
		$		$			$		$
King's	75,880	44,610	50	37,982	763	.....	.....	.....	.....
Queen's	49,800	30,100	63	35,450	574	....	....	17	2,400
Prince	90,453	49,699	107	45,181	1,294	45	1,760	12	19,280
Totals	216,133	124,409	220	118,613	2,631	45	1,760	29	21,680

APPENDIX No. 6.

QUEBEC.

REPORT OF THE FISHERY OFFICER IN CHARGE OF THE GOVERNMENT VESSEL "ABERDEEN," ENGAGED IN THE PROTECTION OF THE FISHERIES OF THE LOWER ST. LAWRENCE AND GULF DIVISIONS FOR THE YEAR 1897.

L'ISLET, 2nd January, 1898.

The Hon. Sir L. H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries.

SIR,—I have the honour to transmit herewith my annual report on the result of the cruise of the fisheries protection steamer "Aberdeen," in the waters of the Gulf and Lower St. Lawrence, during the past season of 1897.

Our cruise in that vessel lasted a little over four months, beginning on the 5th June and closing on the 9th November. During that period we visited the south shore of the River St. Lawrence, from Cape Chatte to Gaspé three times, the divisions of Gaspé and Bonaventure twice, but with hardly time to stop at the principal stations; Magdalen Islands, three times; Anticosti, four times; the north coast from Point des Monts to Natashquan, once; from Mingan to River St. John, twice; and from Natashquan to Blancs Sablons, twice.

Before touching upon the details of our cruise, it may not be found amiss on my part that I should offer a few remarks on the inadequacy of the fisheries service as carried on last season. You are already aware that the vessel detailed for that service was also charged with the supplying of lighthouses below Quebec and in the Gulf of St. Lawrence. This necessarily entailed considerable preparations, and we were on that account unable to leave Quebec as early as the requirements of the fisheries service demand. Thus, our vessel should have been at Magdalen Islands for the spring herring fishery, at a time when the islands are generally resorted to by large fleets of foreign vessels, in order to ensure quietness and check any disturbances which might otherwise arise. Again, the want of a fisheries protection vessel is still more felt on the north shore and on the coast of Labrador, where at time the waters are filled with strangers and rough characters who require to be made aware that there is an organized force on the spot, in order to prevent them from encroaching upon and otherwise injuring the property of resident fishermen, who depend solely upon their catch of fish for a living during the long, dreary winters of the coast.

When this fisheries service was first organized in 1852 and 1853, under the guidance and supervision of the late Hon. P. Fortin, it was with the distinct intent of affording efficient and speedy protection to the most remote localities of the districts of Gaspé and Saguenay. Before 1852, there was no law and no organization on a stretch of coast extending more than 500 miles, and as a consequence, the resident population was at the mercy of strangers and poachers. Mr. Samuel Robertson, an old resident of La Tabatière, in a memoir read before the Literary and Historical Society of Quebec in 1814, said: "Indeed for some years back, the fisheries have been crowded thereabouts, so much so as to seriously annoy each other, and endless quarrels are going on. So far, no blood has been spilled, but if the Government does not interfere and make some regulations, there is no saying what may happen in a country where the total absence of authority has been a contempt for government and laws, where violence is the best title and audace confers more rights."

At Magdalen Islands, the people were at all times in dread of foreign fishermen who ruled everywhere, and although a court of justice and a custom-house had been established, the want of sufficient authority to enforce the law caused almost every procedure to become a dead letter. A similar state of things prevailed in the Bay des Chaleurs, but matters have favourably mended since that time, in the two latter places especially, and there is no doubt that this improved state of affairs is due, to a certain extent, to the frequent visits of the fisheries protection vessel, whose officers, I am proud to say, have, since the inception of the service, always made it a point to fulfil their duty in an impartial and fearless manner, even at the risk of life.

Considering the beneficial results which followed the introduction of that system, I think it would be unwise and impolitic to relax our efforts in this direction. It may be true, as alleged, that the increased population which now resides on the shores of the river and gulf may have become somewhat better educated as regards the observance of the law, and that strangers, under the apprehension of a Government vessel suddenly pouncing upon them, may behave better than in former years; still, I greatly apprehend these good dispositions may come to naught, were it once felt that the steady protection hitherto given to these remote regions is abandoned or even relaxed.

With these few remarks which I deemed necessary to make on the necessity of maintaining an independent fisheries service for the Lower St. Lawrence and Gulf divisions, I shall proceed to speak of each division in detail.

Although the general statistics annexed to this report will, I apprehend, exhibit a considerable decrease in the total yield of the fisheries of this division, as compared with that of 1896, still I have reason to believe that the fishing industry is, generally speaking, in a healthy condition.

Among the principal branches which will show a falling off may be mentioned, the salmon, canned lobsters, and dry cod industries. As regards the salmon fishery, it should be borne in mind that the season of 1896 was an exceptionally good one, and that we cannot reasonably expect such favourable results year after year. The falling off in the canning of lobsters may be attributed to several causes, the most important of which, I regret to say, is the over-fishing of some grounds, and too large an output for the possibilities of the fishery. However, as prices were considerably higher than in 1896, the fishermen have no reason to complain on that score. The low prices which ruled in the European and Brazilian markets also seriously affected the cod fishery and rendered this venture almost unproductive to the fishermen.

FIRST DIVISION.

COUNTIES OF GASPÉ AND BONAVENTURE.

This division, which extends from Cape Chatte, in the county of Gaspé, to Head of Tide, in the counties of Restigouche and Bonaventure, is a most important one, having regard to its piscine as well as to its agricultural wealth. Large improvements came under my observation from Gaspé to Matapedia, and I have no doubt that when the Bay des Chaleurs railway is completed, as I hope it may soon be, the impetus given to the cultivation of the soil and the improvement of the farms will be still more noticeable.

Last year's fishing was, on the whole, satisfactory, as may be seen on reference to the fishery overseers' reports below. The yield of salmon, it is true, shows a falling off, when compared with the catch of 1896, but this was due to special causes. At the same time it must not be lost sight of that the year 1896 was an exceptionally good one, and that the fishermen cannot always rely upon such luck.

Lobsters show a decrese. This is undoubtedly due to over-fishing in the past, and to a consequent exhaustion of the grounds. A heavy storm also destroyed a large number of traps, about the latter end of the month of June, considerably interfering with the fishermen's operations. Prices, however, ruled high, and the fishermen were thus more than compensated. Already there is some talk of some eight or ten new factories being started in the spring.

Cod fishing, which is the staple industry of this division, proved excellent almost everywhere; still, the people loudly complain because prices were so low. A noticeable feature was that cod fishing, which had almost totally failed for several years past between Paspebiac and Carleton, showed signs of great improvement last season, so much so as to more than compensate the loss experienced in the salmon and lobster fisheries. As to smelt fishing, it was too early yet to judge of its success, but from what I was able to see at Gaspé and elsewhere, it looked very promising.

The tax levied in the States on frozen smelts is, however, found to bear heavily on the trade.

Hardly one hundred mackerel were caught in Bay des Chaleurs. The crops looked exceedingly fine, and the population appeared to be amply provided for the winter.

I was pleased to learn that the Mission Indians are now reckoned amongst the most law abiding people of this district. Twenty years ago, my experience went in another direction.

In the upper part of this division, from Cape Rosier to Ste. Anne des Monts, cod fishing as well as herring fishing were good. Agriculture has, proportionally, made greater strides in this division than from Gaspé to Carleton.

The several fishery overseers appear to have been attentive to their duties. I herewith subjoin synopses of their reports:—

COUNTY OF BONAVENTURE.

Tide Head to Maguasha.

The local fishery overseer, *Chas. Brown*, reports a decline in the catch of salmon, as compared with last year, his statistics show a shortage of 30,415 lbs. on the Quebec side, and 48,948 lbs. on the New Brunswick side. The ice remained very late in the bays and considerably interfered with the run of fish. Smelt fishing was good, although the fishermen had a shorter season than in 1896, soft weather in January compelling them to take up their nets to save the fish from spoiling. The total catch is reported at 695,337 lbs. All other kinds of fishing were about an average. Salmon were seen crowding the entrance of streams, waiting for a chance to ascend to the spawning beds. The difficulty experienced by salmon in going up the rivers of this division is due to the fact that during the months of July and August, the mouths of streams are blocked by logs.

Maguasha to Grand Cascapedia.

The fishery overseer for this division, *James Green*, reports a middling catch of salmon, owing to stormy weather during the months of May and June. Cod fishing was very good, lobster fishing the same. Spring herring was abundant, nearly the whole being used for manuring the land. Trout were scarce. The only man who fishes for lobsters in this division did very well indeed, having put up 7,800 lbs., and cleared at least $800 with 100 traps. Messrs. Hoegg and Windsor, of Bonaventure, did not do quite so well. They packed only 190 cases, but these grounds have been steadily fished for so many years that they are getting somewhat exhausted.

Grand Cascapedia to Paspebiac.

Geo. Forest, the overseer of this division, states that fishing was generally good, even better than last year, with the exception of lobsters, which fell about one-half, owing to a scarcity of these crustaceans.

Paspebiac to Point Maquereau.

F. X. Chapados, who has charge of this division, reports a decrease in the yield of the fisheries, with the exception of cod, which shows an increase. Lobster fishing fell much below the average. Salmon fishing also shows a decline; this was due to rough weather in June and July.

COUNTY OF GASPÉ.

Point Maquereau to Corner of the Beach.

John Keays, the local fishery overseer, reports cod, herring and salmon fishing better by one-half than last year. There was a decrease of one-half in the catch of smelts. Lobsters and trout about the same. Capelin failed. Squid was abundant. Out of thirty-five salmon stands in this division, eight were not fished. Lobster packers are reported as having had a very successful season. There were ten canneries in operation, and 17,905 traps were used. The total number of cans is estimated at over 80,000. Fishing was so good at Percé and Gris Fonds Cove, that there is some talk of starting three new canneries there next spring.

Corner of the Beach to Cape Rosier.

Walter Langlois, the fishery overseer of this division, reports an increase of 2,917 lbs. in the catch of salmon, as compared with last year, owing partly to an increase of nets used. Herring fishing shows a decrease of 447 barrels. Although fair catches were made at Cape Rosier during the month of October, there was a falling off in other localities in this division. Cod shows a decrease of 1,465 quintals. The fish struck early enough, and although fishing was good until the 15th August, rough weather afterwards interfered with the operations of the fishermen. There was also a drop of fifty cents per quintal in the price of fish. In lobsters there is an increase of 17,590 lbs., due to the opening of two canneries. A severe storm in June, however, occasioned severe loss of fish and traps. Smelt fishing shows a decrease of 48,119 lbs., due to the incessant cold north winds during the open season. No mackerel were caught.

Cape Rosier to Fame Point.

M. Aspireau, the local fishery overseer, sends no report. His statistics, however, show that the fisheries of his division are in a healthy condition, the total value of the fish caught amounting to nearly $60,000.

I ascertained that at Gris Fonds Cove, boats averaged about 90 quintals on the 1st September, and the fishermen hoped to make a good season, provided the weather proved at all favourable, as fish seemed to be still abundant on the grounds. Three lobster canneries were in operation; one at Point Jaune, worked by Mr. Windsor, where only 68 cases had been packed; another at Fox Bay, which yielded 531 cases, and a third at Anse à la Louise, owned by Mr. Hamon, with a catch of about 400 cases. Such satisfactory results will undoubtedly enable the fishermen to realize good profits, as lobsters fetched a high price this year.

Fame Point to Duchesnay.

Ls. Letourneau, the local fishery officer, reports a satisfactory increase in the yield of his division, but remarks that on account of low prices, the profits were very small. Salmon were scarce. Cod struck early, and fishing continued good during the whole season, except during October and November when the men were prevented from fishing owing to bad weather and a scarcity of bait, although fish were quite abundant on the grounds. Herring, of good quality, were abundant all the season round. No mackerel were seen. The new lobster canneries started in this division do not appear to have had much success; two were closed, and only one will be in operation during next season. Had prices been higher, there would have been a substantial increase in the value of the fisheries of this division. Unfortunately, cod fetched only a very poor figure, and the cost of provisions kept very high. However, when our vessel called at Magdalen River and Mont Louis, on the 4th September, the fishermen at these places appeared satisfied with the result of their work in cod and herring fishing. Some of them had caught as much as eighty barrels of herring, which sold on the spot $3.00 and $3.50 in Quebec. With the exception of hay, the crops looked well.

Duchesnay to Cape Chatte

Didace Bouchard, the overseer of this division, reports a very encouraging increase in the catch. Cod fishing was more successful than last year, the reason for this improvement being ascribed to the non-appearance of white whales (belugas) in such large numbers, and to a little more activity on the part of the fishermen. The same remark applies to herring fishing. Fully a thousand barrels of these fish were sold in Cape Chatte and Ste. Anne des Monts, besides a quantity used for local consumption.

In the month of May last, I received the following instructions from your department:—

"During the present season, the department wishes you to carefully examine the salmon stands in the county of Gaspé, so that you may be in a position to make a full report thereon and advise the department as to the advisability of granting new licenses, which course, I may say, has not been strongly favoured, in view of the danger to the fisheries which might arise therefrom."

In order to enable you to clearly understand the question and arrive at some definite conclusions, I deemed it necessary to compile two tables, showing the yearly catch of salmon in the above-named county for a period of ten years, and the number of licenses issued during a similar period, for the purpose of making comparisons. It would have been more to the purpose had both tables agreed as to the years, but this was impossible, owing to the fact that the latest fishery statistics on hand published by your department stop at the year 1895.

SCHEDULE of the catch of Salmon in the County of Gaspé for the years 1886 to 1895, compiled from departmental reports for the above named years; the whole computed in pounds, a barrel of Salmon being reckoned at 300 lbs. fresh.

Subdivisions.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Grand River....	....	....	....	......	16,600	7,000	12,500	25,600	39,400	34,650
Gaspé..........	85,127	111,355	102,935	91,031	46,456	53,785	54,727	46,667	76,065	56,623
Fox River.....	....	....	....	....	....	....	400	520	425	150
Magdalen River	12,000	12,600	11,400	9,650	6.330	6,874	5,780	7,850	11,950	7,450
St. Ann's	5,559	4,777	5,931	4,000	4,883	4,170	1,475	820	2,542	2,780
Totals.	102,686	128,732	120,226	104,681	74,269	71,829	74,882	81,457	130,382	101,653

TABLE OF SALMON fishery licenses issued in the County of Gaspé from 1887 to 1897.

Subdivisions.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Ste. Anne des Monts	11	......	......	6	4	5	1	7	8	10	15
Mont Louis	10	......	......	14	11	12	11	12	14	15	19
Fox River	0	......	......	0	0	3	0	1	1	1	4
Grand River	93	......	......	88	83	83	82	82	81	99	103
Newport to Percé	16	......	......	22	23	23	25	25	28	32	42
Totals	130	......	......	130	121	126	119	127	132	157	183

You will observe that this last table is incomplete, owing, to missing documents. However, on referring to the reports for 1887, 1888, 1889 and 1890, I have been able to ascertain that the following number of fathoms of nets were used during the above-named years in the following subdivisions:—

——	1887.	1888.	1889.	1890.
Gaspé	45,938	45,985	51,679	46,913
Magdalen River	18,780	14,815	17,980	24,842
St Ann's River	789	2,776	2,882	2,870

There is very little difference in the figures for 1888 and 1889, and as these three subdivisions then comprised the whole county of Gaspé and have since been altered to five, I submit that we may reasonably assume that the number of salmon fishery licenses in 1888 and 1889 was about the same as in 1887 and 1890. A second glance at this table also evinces the fact that while the total number of licenses in 1887 was only 130, it had increased to 183 in 1897.

Turning now to the table showing the catch of salmon for the ten years between 1886 and 1895, it will be noticed that in spite of a large increase in the number of licenses issued, the yield remained almost the same. True, there is a substantial increase in 1887 and 1894, but this is more than compensated by the decline in 1890, 1891, 1892 and 1893.

Therefore, the conclusion I arrive at after carefully studying both tables is that the yield did not keep pace with the corresponding increase in the number of fathoms of nets used. Two reasons can be adduced for this fact: either there were too many nets, or the fishery declined. On the first hypothesis, if you will please refer to a special report of mine which was published in 1875 on the decline of the salmon fishery in the county of Gaspé, you will notice that I therein suggest several plans to put a stop to this falling off. The department decided to adopt, as the fairest way to remedy the evil and ensure the permanency of this valuable industry, the policy of abolishing stands where too numerous, whenever they became vacant, either by the death of the licensees or for other valid reasons. This course, which was pursued in several of the most important localities of the province of Quebec, has, to my certain knowledge, resulted in the most beneficient manner, and it is to be hoped your department will not depart from such a wise policy. Evidently, the undue increase of stands, especially in the estuaries of rivers, must injuriously interfere with the passage of salmon in their migrations to the spawning beds, and as a necessary consequence the fishing must decline. This fact is so well known and so well proved by experience that it is useless to waste words on the subject. I quite appreciate the anxiety of residents on the shores of the county of Gaspé and elsewhere to use every means for the purpose of securing salmon fishery privileges in front of their lands. I am also aware of the strong pressure which is brought to bear upon the department in such matters; but honesty compels me to say that compliance with such requests would, in most instances, be ill-advised, except for very exceptional reasons and in really exceptional cases. The low price which fresh salmon now obtains in Canadian and United States markets, owing to keen competition from Columbia and Fraser River fish, adds another reason in support of my contention. Neither should it be lost sight of that the present state of affairs between the Federal and Provincial governments, and the uncertainty now existing as to the rightful tenure of these stands, makes it imperative to exercise great discretion.

Numbers of anglers in salmon streams are anxious to acquire, by purchase or to sub-let, the rights of holders of licenses, not for the purpose of fishing, but with the view of thinning out the nets and increasing their sport. However selfish such a motive may be considered, it is one which in the interest of the salmon fishery should rather be encouraged than defeated. It puts ready cash in the pocket of the fisherman, without any kind of trouble, loss or labour on his part; it gives satisfaction to the sportsman, and above all it ensures a steady supply of breeding fish to stock the spawning beds, while at the same time it increases the protection of rivers.

For these reasons, I am of opinion that the present number of salmon fishery licenses in the county of Gaspé is quite sufficient, and that instead of being increased, it should, rather, be diminished, especially in the estuaries and in the neighbourhood of York, North-west, St. John, Grand Pabos, and St. Ann's rivers.

SECOND DIVISION.

Magdalen Islands.

The reports from this division are far from encouraging. The local fishery officer, Mr. Chevrier, states that seal hunting by schooners, as well as on the ice near shore, was a complete failure.

The catch of mackerel is computed to have been two-thirds less than in 1896, the reason being ascribed to contrary winds which kept the fish off shore. It is also claimed that the thousands of gill-nets set by foreigners during the months of July, August and September frighten the fish away and prevent them from entering the bays. The local fishermen suggest that this mode of fishing be prohibited during the above named months. Cod fishing was fair around Amherst Island, but prices kept so low as to make it almost impossible to cover the outlay of outfitting.

In other localities, the catch amounted to almost nothing, most of the fishermen being engaged in mackerel fishing. These fishermen are, therefore, rather poorly prepared to face the coming winter. Lobster fishing was generally remunerative, and the large number of canneries now in operation give employment to a good many people for a few months, but this cannot last very long, as the lobsters will be unable to stand the heavy drain put upon the fishery. There is a great diversity of opinion about the time during which lobster fishing should be allowed. A good many incline to the belief that fishing should stop on the 1st July, to be resumed on the 15th August, and close on the 1st October. There were several violations of the law, but not so many as in preceding years, owing to increased vigilance on the part of local guardians. Several parties were detected fishing illegally, and mulcted in fines. A large number of traps and fishing gear was also destroyed. Temporary guardians should be employed at House Harbour, Wolf Point, Grand Entry, Grosse Isle, and in the lagoons. It would, likewise, be advisable that a Government cutter be at hand to assist, when needed, in enforcing the law. Whenever this officer came across illegal traps, these were mercilessly destroyed without regard to whom they belonged, and he says he could not do more.

Our steamer had occasion to visit these islands three times during the season. On the occasion of our last call, I had to listen to the most heartrending tales about the situation of the residents.

According to the report of the local overseer, all kinds of fishing, with the exception of the lobster fishery, had completely failed. The crops had a sufficiently promising appearance, but agriculture is carried on such a very limited scale on the islands, that this alone cannot meet a failure in the fisheries.

It was reported that there were only ninety barrels of flour on the islands, which the merchants refused to sell, being unable to get anything in exchange. I see by the newspapers that the provincial government has been urgently called upon to send some relief to the sufferers. Unless this has been done, I apprehend there will be a great many cases of distress during the winter. This chronic state of poverty is very much to be deplored; but the remedy is not so apparent. The soil of the islands is certainly fertile and able to sustain a population four times larger than the present one, were it only properly cultivated. In the course of conversation with aged residents of sixty-four and seventy, I learnt that their lands had never been ploughed.

After an absence of nineteen years, I noticed, at West Point, the same number of stumps which were there before, and this too, near the public highway and in one of the most favoured places.

As regards the suggestion made by the local fishery overseer about a change in the close time for lobsters, I must say that I feel, to a certain extent, inclined to share his opinion.

In Dr. McPhail's report on the cause of discoloration in canned lobsters, it is mentioned that "there is a considerable variation in the time required for molting, and that it is not marketable for at least a month;" but Dr. McPhail adds that "the condition of the flesh has no bearing upon its deterioration in the cans. The most that can occur is a slight alteration in the flavour or consistency of the flesh."

In this connection, I may be permitted to remark that experience has demonstrated that in the Bay des Chaleurs and at Magdalen Islands, lobsters begin to cast their shells about the 15th June, and that most of them are in full molting condition during the month of July and the beginning of August. In the month of September, the lobsters have new shells and are in a perfect state of health, as shown by this year's catch at Magdalen Islands during the month of September. When the department, therefore, sees fit to grant an extension of two or three weeks in the time of fishing, I contend that this extension is granted just at a time when lobsters are becoming more and more unmarketable, or when most of the fish are females in eggs. Were fishing strictly prohibited from the latter end of June to the middle of August, or the beginning of September, and allowed after the first of September until the middle of October, I think this would afford greater protection to the breeding fish and at the same time give more satisfaction to our fishermen.

I submit this question to your wisdom, satisfied as I am, that my recommendation can be backed by facts as well as by experience.

During the course of the season, I was instructed by your department to inquire into some complaints made against the setting of a trap-net in Pleasant Bay. The petitioners alleged, as I understand (not having seen the petition), that the use of this net was injurious to the herring fishery, in so much as it prevented fish from running inshore and lessened the profits of the fishermen. Upon inquiry I found these apprehensions to be groundless. It takes very little to exercise the imagination of some people, and the present instance is a case in point.

How such a trap-net could injure the fishery by preventing fish from running inshore, is more than I can imagine. It had meshes of four inches, and was set with special regard to the non-barring of channels. The large number of herring caught inshore last spring was positive evidence that the net in question did not frighten the fish. So far as this matter is concerned, I hold that seining, as carried on around the islands, is much more likely to frighten the fish, break the schools, and ultimately prove injurious, than trap-net fishing.

After fully discussing this matter with the petitioners, they were compelled to admit that the trap-net in question was not injurious in the sense claimed by their petition;

but, they added, that it worked a real injury on their interests, by enabling the owner to have ready a supply of bait for the bankers in the morning, while they, who could only catch the fish by seines, later in the day, lost a good many chances of selling them. This was the whole secret of the agitation. I soon quieted their anxiety and told them plainly they had no valid reason of complaint; that the net in question did not interfere with the run of fish; that the present supply of spring herring at the islands was larger than the demand; that, should they deem fishing with a trap more remunerative than seine fishing, they were at perfect liberty to adopt that system, and that, moreover, the owner of the trap in question had asked them to go into partnership, which offer they refused. This settled the matter.

Another subject which engaged my attention was a request that net fishing for mackerel in Pleasant Bay be prohibited from 1st July to 31st December. I must say that there seems to be more sense in this request than in the other. For quite a number of years, hook and line fishing for mackerel in Pleasant Bay has been on the decline; the number of foreign vessels resorting to the islands for this fishery has nearly doubled, while the quantity of nets stretched across the entrance to Pleasant Bay, and on the south shore of the islands has followed a similar ratio of increase. It is, therefore, not to be wondered at, that hook and line fishermen find a difference in their catch. While stating that mackerel has undoubtedly decreased in Pleasant Bay, I must not be understood as meaning that the species has entirely disappeared, but that they have evidently been driven to seek other places owing to the operation of so many nets near the mouth of the bay. This will be easily seen when one keeps in view the erratic movements of these fish. During spring-time, when mackerel first strike inshore, in search of spawning grounds, they are thin and inactive, with little heed for the nets which they may find across their way. They are then easily caught. But later in the season, after spawning time, the fish are fat and strong and avoid the nets, which thus become an impediment to their run inshore.

In places where nets are not used, such as on the north shore of the islands, near Grindstone, Allright and Bryon Islands, and around Bird's Rock, mackerel are always to be found, and fishermen, resorting to these places, may always rely upon successful trips, provided the weather be at all fair.

Considering therefore the present state of the mackerel fishery at Pleasent Bay, as well as on the south side of Magdalen Islands, and bearing in mind that this is the result of an over-crowding of nets, I am of the opinion that it would be advisable to prohibit fishing between the 1st July and the 31st December, inside of a line drawn from the east point of Magdalen Islands, to the east point of Entry Island. This arrangement, if carried out, would give ample satisfaction to the Islanders who, during such close-time, could engage in hook and line fishing.

Outside fishermen would have no just ground to complain, since they would be placed on the same footing as resident fishermen.

As to the other suggestion, that the number of men on each vessel, and the quantity and length of nets to be used, be fixed by regulation; this is a matter which must be left to the discretion of the skippers.

THIRD DIVISION.

THE ISLAND OF ANTICOSTI.

In 1535, Jacques Cartier took possession of the Island of Anticosti in the name of Louis XIV., King of France, who subsequently granted it to the celebrated discoverer, Louis Jolliet, for the purpose of forming fishing establishments thereon. Jolliet appears to have founded some establishment at English Point and to have engaged in fishing and fur trading, but his venture does not seem to have prospered. At his death and that of his children, the property passed into the hands of the heirs. It was sold in 1884 by order of the Court of Quebec. Two years after, the island was acquired by a London Company for the sum of £200,000, payable in shares, but this company soon went into liquidation without doing anything. In 1894, the island was finally acquired by Mr. Henri Menier, of France, for $160,000.

The Island of Anticosti is 135 miles long by over 30 miles wide, covering an area of two millions and a half acres. A thorough exploration made in 1895 disclosed the following facts.

The soil is reputed good on two-thirds of the island, and there is room for thousands of settlers and labourers. Timber, suitable for building purposes or for the manufacture of pulp, abounds. Water power is found almost everywhere. Fish are abundant along the shores and in the rivers of the interior. Black bears, otters, martins, red, gray and silver foxes constitute the fauna of the island. The kinds of fish frequenting its waters are salmon, trout, eels, cod, herring and lobsters, while the woods and shores are crowded with almost every kind of birds from the eagle to the plover.

It is not to be wondered at, therefore, if Mr. Menier felt tempted by such prospects, and that he should have jumped at the enticing offer placed within his reach at such a low figure. He thus became the owner of a small kingdom, still undeveloped it is true, but, as large as many kingdoms in Europe.

To be enabled to leave Paris during the summer season, on board a comfortable yacht, with a congenial company of friends and spend a couple of months fishing and shooting on one's island, is indeed a royal pastime, which few persons can offer themselves.

The great drawback of the place is the want of safe harbours. Around the whole of the island there are but three bays : Fox Bay, Ellis or Gamache Bay, and English Bay, where schooners of light draught can find shelter, and even then, provided the wind blows from the right quarter. But, with the work already undertaken by Mr. Menier, and under his able guidance, it is to be hoped that this state of things will soon be mended, and that the Island of Anticosti will no longer be known as the "inhospitable." Already several important works have been begun at Gamache and English Bays, which are now joined by a good road. English Bay has been selected as the residence of the governor. A church and presbytery are being built there for the missionary. A long wharf affords ample facilities for the landing of passengers and goods. Communications with the mainland and Quebec are frequent and regular during the open season, thanks to Mr. Menier's little steamer, "Savoy." This is an immense improvement on the packet service. It is true that it does not ensure communications with the outside world during winter, but if the future development of the colony comes to anything like Mr. Menier's expectations, I venture to say that we will find means to overcome these drawbacks.

At the date of our landing at English Bay in June last, I could not but look with surprise at the numerous improvements which met my eyes. Instead of fifteen or twenty miserable huts which were there formerly, we contemplated twenty-four well designed and substantially built houses, nicely painted inside and outside, located at regular intervals, and presenting altogether a most favourable impression when entering the harbour. Conspicuous among these was the residence of the governor, Mr. Commettant. Then came the large stores, offices, saw-mill, workshops, &c. Streets macadamized with gravel from the beach, run through the village, and a good road leads from Ellis Bay to Strawberry Cove, a distance of eight miles.

Mr. Commettant most obligingly showed us everything, explaining on the way the improvements already made and those he had in contemplation, such as the laying of squares, the planting of trees, flowers, &c.

At a short interval from the village, on a high land overlooking the bay, are found the large farm buildings of the establishment, neatly painted, with floorings in asphalt, iron troughs, and every accommodation for the cattle. The latest hygienic improvements are there met with. The stock of milch cows, horses and pigs could not indeed be better. We also noticed a fine specimen of the North-west buffalo and a wapiti, which Mr. Commettant intends setting free so soon as he has secured a pair of each. Two deer were given their liberty some eighteen months ago. They have lately been seen at the other end of the island.

At the present time, there are about 130 acres of land cleared, a large portion of which is under cultivation. Oats, barley, potatoes, and vegetables of various kinds, although recently planted, had a most promising appearance, and I question very much whether better looking crops could be found at the same season of the year in other portions of the province of Quebec. Please bear in mind that all these improvements have been achieved during the comparatively short space of eighteen months. About thirty men are now working on the farm, or engaged in other labour, at the rate of one dollar a day, and every man who wishes to work is employed; so that the local fishermen cannot complain that they are unable to earn a living. During the winter there will be plenty of work in the cutting of logs and the making of boards and deals at the mills. Last winter 11,000 logs were cut. This timber has all been used to build houses, etc., as required.

Mr. Commettant informed me that Mr. Menier felt inclined to spend as much as one million dollars a year, if necessary, to clear the land, and to make the necessary improvements to render the access of the island safe. With this object in view, he has already built a good wharf, 200 feet long, where ordinary sail-boats can find a safe shelter at all times. It is also his intention to construct a breakwater at English Bay, where vessels of twenty feet draught may be able to anchor safe in all kinds of weather.

I must not pass under silence the improved style of trading which has been introduced in the place. Instead of the exactions sometimes practised by unscrupulous merchants on other parts of the coast, I found everything selling just as cheap as in Quebec and elsewhere. For instance, a loaf of bread which costs sixteen cents in Quebec, is retailed here at twelve. The quality is excellent, and the weight equal. The same rule prevails with pork, flannel and other goods, although these articles have to be brought from Quebec. Such deeds cannot be too highly praised. Good order prevails everywhere. One of the regulations for the government of the island reads as follows: "The use of alcohol, spirituous and fermented liquors is prohibited." This is sufficient to show that the owner wishes to have order maintained around his domains. The relations between fishermen are cordial and friendly, and it is easy to see that the hand of a firm, but considerate master has had a good deal to do with a state of things seldom met with around fishing establishments, where riot and bad language too often prevail. Besides the 30 or 40 men generally employed on the island, Mr. Commettant has brought 60 others from Quebec who, for several weeks, have been employed working at a canal for the purpose of draining two lakes of 50 and 20 acres each in superficies. This canal will be 2,000 feet in length, nine feet wide and five feet deep. There are six feet of water in the lakes. The present intention is to leave a depth of one foot of water in the lakes, which may be filled again by means of stop gates, as circumstances demand. This canal crosses a small river which flows from the lake and enters the drain near the sea-shore. It is confidently expected that by means of this extensive and costly work, a large area of marsh lands which is considered the richest on the island, will be redeemed. At a distance of about two miles east of the largest of the above lakes, there is another very deep lake, filled with splendid trout.

A good carriage road leading to this lake is in contemplation. Needless to say that these works and other improvements which Mr. Commettant intends to start this season and next, are of the greatest assistance to the residents of West Point. Nothing unusual came under my notice at the other stations, only that at South-west Point, I found potatoes and other vegetables looking as promising as at West Point.

No fishing was carried on at these places, except at about a mile from East Point where most of the fishermen came to meet me and receive their bounty cheques. They had been fishing near the place while waiting for the steamer. They reported bait and codfish scarce, but herring had struck abundantly during the month of May in Fox Bay. However, no schooners visited the place to buy, so that the fishermen took only the quantity needed for their own use. Diphtheria, in its severest form, had visited this locality during the spring. This epidemic lasted for three months, carrying away eight persons, and considerably reducing the already limited population.

In his anxious desire to speedily restock the waters of Anticosti, Mr. Menier forbade fishing for salmon for three years, inside and outside the rivers. Mr. Bradley is the only person to whom he gave permission to fish a salmon net at Chaloupe Creek. With the same laudable desire regarding the lobster fishery, Mr. Menier concluded not to allow canning on the shores of his island. When inspecting the locality, a year ago, he noticed that all lobsters which entered the traps, large as well as small, or berried, went to the boiling pot. Wishing to put a stop to a practice which, in his opinion would soon have ruined the fishery, he, as absolute owner of the island, gave the directions above referred to. In the meantime, two parties, Mr. Stoddart, telegraph operator and Mr. Samuel Baker, obtained permission from the department to pack lobsters at Fox Bay; the first one, Mr. Stoddart, packs on Government ground, while Mr. Baker packs on a lot which he has leased from Mr. Menier, for a number of years and in the deed of which no mention is made of lobster packing, thus presumably giving Mr. Baker a right to pack, if he so desires, always with the department's authority. Anyhow, this is as I understand the matter. Mr. Commettant claims that the above-named parties have no right to pack, while they claim they have. The above named gentleman was prevented from going to Fox Bay at the time owing to prevailing diphtheria, but he seems very in earnest in his pretentions. However, it is quite probable that this difficulty will blow over of itself; it being reported that, in spite of all their endeavours, Stoddart and Baker had very poor success, although they are said to have canned all the lobsters that came in their way, large or small, as well as berried. Mr. Commettant is determined to put a stop to these injurious practices in future. Fourteen families from Magdalen Islands, have applied for grants of land and permission to fish at Anticosti; their intention being to move early next spring. These applications have not yet been answered, and it is not probable that any action will be taken until the difficulty at Fox Bay is settled, as this is the next locality Mr. Commettant is most anxious to colonize and where he contemplates making large improvements, the same as at English Bay.

A glance at the statistics annexed to this report, which were kindly gathered for me by Mr. James Duguay, of Strawberry Cove, shows that the Island of Anticosti has lost a great deal of its former importance as a fishing resort. No doubt, this is partly due to the fact that the owner of the island now prohibits fishing for salmon and trout, as well as the canning of lobsters, but, at the same time, it is evident that the yield of the fisheries has greatly deteriorated from what it formerly used to be. The total value of fish reported barely amounts to $3,500, while the value of fishing gear employed does not exceed $2,500. Let us hope that the impetus given to the colonization of the island will assist the development of the fisheries, and that in a few years we shall see there a state of things which will be a credit to the Dominion.

At the date of our last visit to the island, I was informed that the boats of West Point had had very poor fishing, hardly realizing an average of thirty quintals each. However, they rely upon the work which they will secure from Mr. Menier, to pull through the winter. Lumbering had already begun, the saw-mill was in operation; four miles of road from English Bay to Ellis Bay had been macadamized; the farm was filled with grain; oats yielded ninety-eight bushels out of six bushels of seed, and 100 pigs were fattening for winter's use. Added to this, 145 men were working for Mr. Menier, and their number will probably be increased by next spring.

FOURTH DIVISION.

NORTH SHORE AND COAST OF LABRADOR.

This important division, which extends from Point des Monts, in the Gulf of St. Lawrence, to Blancs Sablons at the entrance of the Strait of Belle Isle, covers about 500 miles of sea-shore. The eastern portion is known as the coast of Labrador, and appears to have been visited as early as 1500 by French fishermen from Dieppe. In his first voyage, Jacques Cartier met, near Nabissipi a vessel bound for the harbour of Brest.

With very few exceptions, all the fisheries of this division have been successful, as is fully explained in the following reports of the different fishery overseers:—

Godbout Division.

This division, which extends from Bay des Rochers to Point St. Charles, is under charge of Overseer *N. A. Comeau.* He reports a slight decrease in salmon net-fishing, due to a prevalence of easterly winds which favoured some stations, while being very disastrous to others. Salmon angling was very fair, being about the same as last year. Trout were again scarce this season. A few schools of mackerel were noticed outside Godbout Bay, but very few were taken. There was a falling off of more than one-half in the quantity of herring taken, although the number of nets used was larger than heretofore. People seem to be under the impression that these fish are driven away by the large herds of white whales which infest this part of the coast during the summer months. Cod was abundant everywhere, and the catch was above the average, although the weather kept very stormy during the best time of fishing. Some boats, manned by two men, caught as much as 1,000 lbs. in one day. Unfortunately, prices were very low, and fishermen did not realize half the usual amount. There is an increase of two-thirds in the catch of halibut. This is mostly due to greater attention being paid to this fishery and to the use of trawls. Most of these fish were of large size. Bait of all kinds was abundant the season through. There is only one lobster cannery in this division, located at Lobster Bay. It shows a further falling off in the number of cans. The size of the lobsters is also decreasing, and it is very probable that in a year or two the cannery will have to be closed. Very little attention is paid to smelt fishing in this division, although these fish are quite abundant. Want of communication with outside markets during the months of November and December precludes the possibility of this fishery developing into large proportions. In the course of our first visit to Point des Monts, I heard most encouraging reports on the state of this division. The resident population, comprising about sixty-five or seventy persons, was in fair circumstances, and well prepared to face the winter. Hunting had been remunerative and sealing very good.

I could not, however, but be struck with the large number of salmon and trout licenses granted by the department, and both the overseer and I came to the conclusion that it was about time to call a halt, as almost every imaginable place where a net can be set on that coast is occupied.

Moisie Division.

In this division, which extends from Bay des Rochers to Point St. Charles, the local fishery overseer, *Mr. Mignault*, reports that salmon fishing began on the 22nd May and closed about the middle of July. The catch, which amounts to 165,398 lbs., may be deemed a good one, although somewhat inferior to that of 1896. Strong east winds during the month of June interfered with fishing and injured a large number of nets. Four rods are reported to have killed 175 salmon in Moisie River, although angling had to be given up on the 5th July, on account of all the fish having gone up.

Cod fishing was middling ; yielding 1,298 quintals less than last year. This was ascribed to stormy weather having prevented the barges from going out. Capelin failed for the same reason. The fish was sold to a Halifax company at $2.60 a quintal.

There were thirty-seven barges and eight schooners less than last year, engaged fishing in this division. Messrs. Robin & Collas closed their establishment at Moisie in the fall of 1896, and several fishermen at Jambons have followed their example. Herring were scarce during the spring and fall. The killing of seals amounted to 152. Launce and squid were abundant, especially in the fall.

Lumbering shanties have been started, on Ste. Marguerite River, by Mr. H. R. McLellan, of St. John, N.B. This will give employment to about 200 people.

Everything was quiet during the season ; order and close observance of the law having prevailed everywhere.

Duty compels me to make the same remarks as above, with regard to the large number of licenses granted in this division. Indeed, every available spot seems to be occupied, and I do not see how it is possible to allow any more stands. As a matter of fact, a good many of the licensees would be more profitably occupied were they engaged in some other trade than fishing for salmon in the way they do now.

Mingan Division.

This division comprises that portion of the coast extending from Sheldrake to Esquimaux Point.

The local fishery overseer, *Mr. Duberger*, reports that cod fishing was not carried on quite so extensively as last year. The bad state of the market is to a certain extent accountable for this. The firm of LeBoutillier & Co. kept no barges fishing at Thunder River or Magpie; Messrs. Robin, Collas & Co., closed their establishment at the Dock, Ridge Point; and Messrs. Alexander, of Whale Cove, greatly reduced the number of their barges. All this occasioned a decrease of 5,875 quintals in the yield. Salmon fishing was also much below the catch of 1896; there being a decrease of thirty-one barrels.

Fly fishing was good. Romaine River yielded 150 salmon, Mingan River, one hundred, and St. John River, 300, to sportsmen. Herring fishing was almost a failure.

Seal hunting by Esquimaux Point schooners met with but poor success; only 500 being killed, against 1,500 last year. The month of August kept very boisterous and unfavourable for cod fishing.

A most violent storm was also felt during the latter part of June, two barges being lost at Long Point, and ten swamped; thereby occasioning a loss of $1,000.

At Magpie, twenty-seven barges were more or less damaged. A scarcity of bait was being felt at St. John, Magpie and Esquimaux Point, when squid fortunately appeared. Some 2,000 barrels of green codfish were caught and sold on the Quebec market at $2 or $3 a barrel, according to quality.

Order prevailed everywhere in this division during the whole season.

Natashquan Division.

This division which extends from Esquimaux Point to Natashquan River, was under charge of fishery overseer *Geo. Gaudin*, who reports that seal hunting yielded only moderate returns. Out of four schooners from Natashquan engaged in this fishery, one secured a full load, another, half a load, and the two others about quarter loads. About sixty seals less were caught than in 1896, but there is an increase of 900 gallons of oil; seals being larger this year. Prices were very low. The catch of salmon at Natashquan was about an average one, but poor at Agwanus and Nabisippi. The quantity of salmon, packed in ice, and sold fresh, amounts to 48,000 lbs.

Three rods killed 130 salmon in Natashquan River. Three lobster canneries were operated, and 250 cases packed, against eighty last year.

Cod fishing shows a falling off of about one-quarter. Rough weather and contrary winds prevented fishermen from going out as often as they wished. Herring fishing was poor; capelin abundant. Order prevailed everywhere.

The village of Natashquan, is certainly one of the most progressive places of the coast. A large number of residents appear to have put something by for a rainy day. Bad seasons do not seem to be of frequent occurrence, the inhabitants being always sure of finding more or less codfish on the banks opposite their place. Fur hunting also brings fair returns to the locality. One man, I was told, cleared as much as $180 last winter. The boats averaged about 80 quintals of fish each, which is not a bad season, although below that of last year. At Esquimaux Point which I had not had occasion to visit for fourteen years, I came across a good many improvements so far as the number of buildings and families went. There was now 160 families in the village, but the wealth of the population has not kept pace with the increase in the number of souls. There seemed to be a general state of destitution, which cannot but be augmented by this year's failure of the fishery, as it was one of the worst ever experienced on this part of the coast.

As already explained, seal hunting on the ice hardly paid expenses; herring totally failed, and the weather was so stormy that for over a month the fishermen were hardly able to catch bait and go out to the banks for cod fishing.

The residents seem discouraged and talk of abandoning the place, in quest of other quarters. A petition was being prepared, praying the Government for assistance in case the fall fishery did not prove successful. The crop of vegetables had a promising appearance at first, but grasshoppers destroyed the best part of it.

The fishermen of the Point own splendid fishing boats, provided with small cabins and proper fittings which enable them to remain on the grounds for two or three days and nights at a time. Six or seven years ago, these people used to go down the coast on a fishing trip which lasted two or three weeks. On several occasions, they lost their fares by reason of arriving too late. Now, they fish opposite their village, where cod is abundant and they are thus enabled to secure good catches, provided the weather be at all propitious.

While at Esquimaux Point, I met two lobster packers who fished in the old Watsheeshoo division. They reported having done well, considering their outfit. They likwise informed me that two vessels from Newfoundland, and one from the States had fished for lobstors in this division for three or four weeks. They went away when they learnt that we were about visiting the locality. In a former report to the department, I recommended the appointment of an overseer for this division, which is an important one and difficult of access.

I am sure the revenue derived therefrom would more than repay the cost of supervision. Among the salmon streams of that part of the coast may be instanced the Kegashka, Muskuarro, Washeecootai, Romaine and Watsheeshoo rivers. All these used to be reputed good salmon streams, and no doubt, efficient means should be taken to protect the salmon entering them to breed, if we want to ensure a continuance of good fishing on the sea-shore. The limits of this division should extend from Etamamion River to Kegashka where about 20 or 30 vessels resort every summer for cod fishing. Wapitagon Harbour is the western limit of Overseer Le Gouvey's division, which is a very extensive and difficult one to guard, the western portion thereof especially.

This year, vessels using trap-nets around Wapitagon Harbour entirely spoiled Mr Blais' salmon fishing in the Etamamiou, so much so, that he took only five barrels of salmon instead of fourteen or twenty. It is moreover reported that one trap-net caught enough salmon to pay the cost of the trap. Were the western part of the Pacachoo division added to that of Romaine, the overseer of that division could at all times move among vessels' crews and make them comply with the law, or else take down their names and have them dealt with by the officer in command of the fisheries protection steamer.

It should also be borne in mind, that this part of the coast from Musquarro and Romaine, to Coacoachoo and Wapitagon Harbour, a distance of about fifty miles, protected as it is by rocks and islands of various size, is the great resort for wild-fowl. From what I have been able to notice, the number of wild-fowl has not materially decreased since I had occasion to visit the place twenty years ago. Neither is the robbing of eggs of such frequent occurrence, or practiced on such a large scale, as formerly, although some occasional pillaging may still be done by crews of vessels during the month of July. This could easily be prevented through the appointment of a resident overseer, as suggested. With proper understanding with the provincial government, and a moderate remuneration, our officer could be clothed with the powers of a game warden, and as such, render good services. I am quite satisfied such a scheme could easily be arranged, and that it would work well when in operation.

On our last visit to the coast, on the 11th October, we anchored at Kegashka Bay. This station, which is about twenty-two miles below Natashquan, formerly used to boast of as many as nine resident families. This number, which was reduced to one about ten years ago, owing to a succession of bad fishing seasons, is now on the increase Six new families migrated there from Newfoundland. They appear to have done well and are prepared to face the coming winter with ample provisions.

I was informed by Mr. Foreman that the Kegashka River yielded only eight barrels of salmon. In years gone by, this stream used to be good for twenty-five or thirty barrels. Mr. Foreman ascribes his ill luck to the large quantity of driftwood in the stream, which injures his nets and impedes the run of fish. He expected the Government would assist in removing these obstructions, but I explained to him that any work of this nature would have to be done at the licensee's cost.

At Romaine River, we found eight families in tolerably good circumstances. Herring and cod had been abundant during the summer, and fish were still hovering about the coast. Fur hunting had likewise been remunerative. Although the licensee of the Romaine caught only eight barrels of salmon, fishing with the fly, in that stream as well as in Watsheeshoo was reported to have been exceedingly good.

St. Augustine Division.

This division, which extends from Cape Whittle to Chicatica, is under charge of fishery overseer *Jno. LeGouvey.*

This officer reports an increase in cod and herring fishing, especially in the western part of his division, but a falling off in the salmon and lobster catch, owing mostly to the use of trap-nets. Herring was abundant all along that coast from Blancs Sablons to Mecatina. I myself witnessed two big hauls of 300 and 500 barrels of herring by Capt. Howard's men. Capt. Howard fishes for cod, herring and lobsters in the waters of this division. His catch of lobsters was not large, only about 250 cases, but he expected to cover his loss by success in herring and cod fishing.

On our way up the coast we called at Whale Head West, Little Mecatina, Sloop Island and Harrington Island. At all these places the fishermen had done well, but they complain very much of annoyance and interference on the part of strangers.

On the plea of having been left without protection by the Government, they felt very little inclined to pay license fees, but with some reasoning, I succeeded in making them understand how matters stood, and in the end everyone paid, except the absentees who will settle with Overseer LeGouvey before he leaves the coast.

What makes these fishermen feel more dissatisfied, was to see that while they were compelled to pay license fees to fish in their own waters, strangers could escape scot-free and go away unmolested without paying a cent for the same privilege.

Among the captains of vessels who behave most reprehensibly in this respect, I am sorry to notice the names of Nova Scotians who certainly ought to know better than act in the way they did. A list of these defaulters will be forwarded to the department by the overseer with his return of licenses. I would strongly advise that some action be taken in the matter. For instance, the bounty cheques of those who have left without paying might be withheld. As to the Newfoundlanders, I will see to it, another season, that those who have escaped shall pay.

I was informed that there had been from 450 to 500 Newfoundland vessels fishing on the coast of Labrador. Out of these, certainly not more than one-fourth paid license dues.

Supposing there were 175 traps in the schooners that went away without paying and this is a very low computation indeed), the loss to the Government would be about $2,000.

Judging from appearances, I am safe in arriving at the conclusion that, encouraged by their previous success in evading payment, these fishermen will repair to our shores in larger numbers next season, and unless the fisheries protection vessel is on the spot at the right time, the same scenes which were enacted this year, will be repeated.

It is very easy, though, for our vessel to be there when needed. As soon as herring fishing is over at Magdalen Islands, and when we have had a look at the salmon and lobster fisheries of Gaspé and Bay des Chaleurs, the fisheries protection vessel could be on the coast of Labrador by the 20th June, and remain there a sufficient time to maintain peace and order, and help to collect a large revenue for the Government.

Salmon fishing on that part of the coast from Harrington Harbour to Blancs Sablons is now a thing of the past, only about thirty barrels being caught in St. Paul's River, and a few more at some straggling stations along this coast. The reason of this failure is ascribed to the working of so many trap-nets, which frighten the fish and drive them to quieter places. A few salmon are, however, caught in trap-nets now and then, but this is an unusual thing.

From the above it will be easily understood that trap-net fishing has its inconveniences as well as its advantages. It enables the residents to secure an abundant supply of cod, with less work and hardship than by the slow process of hand and line fishing. When I had occasion to visit this part of the coast twenty years ago, I found a lazy, indolent and poor population. Now, this is all changed for the better. All seem to be working as hard as they can; success with the traps raised their courage, and, I believe, that most of them are even able to save money. All this has been taught them by the Newfoundlanders, whose incessant labour shows what intelligent work, united to perseverance, can do.

Fur hunting on that part of the coast was very successful; in fact, better than for many years past. At the Hudson's Bay post of St. Augustine, there were seventy skins of black foxes. This was deemed one of the best results for a long time.

I felt very sorry at being unable to stay longer on that part of the coast, but the requirements of the lighthouse service demanded our early return to Quebec. There were a great many places and rivers which I would have wished to visit, but time would not permit of my doing so. For instance, I should have liked to have had a look at the former division of Watsheeshoo, which extended from Kegashka to Wolf Bay, and which, since the demise of Overseer Mathurin, five or six years ago, has been without an officer. This is an important division, and I hope I will not be deemed travelling out of my duty if I recommend the appointment of a good officer for it.

SCHEDULE of Vessels boarded by Overseer LeGouvey at Long Point, Ste. Augustine Division.

Name of Vessel.	Captain.	No. of Men.	No of Boats.	Tonnage.	No. of Traps.	Quintals of Cod.
Pauline	C. White	6	3	24	1	300
Surrey	J. Duffitt	6	3	38	1	500
Water Lily	H. Butt	9	4	33	1	450
Foam	C. Wells	11	4	49	2	800
Bently	S. Collins	11	3	92	2	675
Romeo	W. Hiscock	12	3	84	1	600
Trusty	S. Borne	11	3	32	1	700
Green Leaf	G. Burton	10	3	32	1	600
Nelly	G. Fullum	8	3	35	1	620
Nelly J. W	C. Johnson	10	3	50	1	860
Denise	J. Fullum	9	3	46	1	700
Lilly Dale	G. Miller	8	3	44	1	575
Peerless	J. Thom	11	3	54	1	750
Can't Help It	J. White	11	3	54	1	700
Candid	J. Murphy	12	3	50	1	800
Kitty Clide	J. Rendall	9	3	51	1	775
Sea Waves	J. Connolly	12	3	52	1	825
Mariner	P. Randall	11	3	64	1	800
Constance	Robt. Burton	12	3	59	1	860
Poppy	J. Thorne	6	2	27	0	300
Fire Fly	J. Bond	7	2	55	1	600
Nimrod	J. Everton	9	3	45	1	700
Hyacinth	F. Andrews	9	3	31	1	675
Emma	C. Moodie	10	3	34	1	730
Ellen F	J. Bennett	7	2	34	1	850
Star	W. Stickland	5	2	47	0	460
Undaunted	B Tilley	11	3	51	1	875
Victor	E. Pearl	7	2	29	0	500
Mary Jane	F. Moore	6	2	26	0	300
Flora	M. Croft	8	2	30	1	700
Elly	White	6	2	16	0	275
Lily Bird	Brown	7	3	31	0	500
Bonita	J. Furlong	8	3	42	1	735
Anny	March	6	2	26	0	350
Coronella	Bentlett	7	2	34	1	570
Unity	J. White	6	2	22	0	325
Lark Spur	O. Bragg	13	3	56	2	950
		327	102	1,569	32	23,685

This does not cover the whole catch, as some of the above vessels fished for three or five days after the overseer had left.

The islands and bays about Bonne Esperance were visited by a large number of schooners from Newfoundland and Nova Scotia, but owing to easterly winds and shore ice, the fish kept away or were driven to other places; so that strangers and residents alike, had but poor fishing. The same results were felt at St. Augustine. At Pacachoo, on the inside islands, vessels secured full loads in a few days. At Gros Mecatina, codfish were thick inshore at first, but as soon as the ice grounded, they moved away, causing a poor catch for the vessels. However, the residents followed the fish on the shores of the inside islands and made good catches. On the whole coast, from Bonne Esperance to Mecatina, fish were abundant in deep water, so that with average fair weather, the season's business may turn out to be a paying one for those who had poor luck at the inshore fishery.

The local fishery officers experienced a good deal of trouble in collecting the fees on trap-nets. A great many vessels fishing at Bonne Esperance, Pacachoo and Gros Mecatina, skipped without paying, but most of them paid before going away.

The most obstinate were captains of Nova Scotia vessels, who insisted upon paying to me, or to the department direct. The overseers and fishery guardians took their names and will transmit them to the department, so that those who have not paid may be compelled to do so. These officers could not exact payment in cash, as this commodity is a very scarce article on the coast; they had to take notes which will be converted into cash later in the season.

I must add a few words on the sedentary seal fishery, which failed, both in the fall of 1896 and last spring. Mr. Robertson, of La Tabatière, caught 300 in the fall, the other five or six fishermen hardly caught thirty each. This spring, Mr. Guay of Bradore Bay, and Mr. Joncas, caught about 170 each in places where several thousands used to be killed. It is claimed that seal hunting on the ice and the destruction of old seals before they have paired has a good deal to do with the ill success of these sedentary fisheries.

While visiting Harrington Harbour, during the month of November, we came across four traders from Halifax and Quebec, who seemed to be driving a thriving business; a proof that fishing had been good. At La Tabatière and neighbouring stations, the same order of things prevailed.

When at Bradore Bay and Long Point, during the latter part of October, I managed to arrange the selection of stands for trap-nets, next season, so as to prevent the difficulties which have arisen between our people and the Newfoundlanders, taking care to allot a station to each of our fishermen who owns a trap net.

In the course of these arrangements, I had to notify several of the non-residents of the changes in the regulations, telling them that I had been asked for stations by our own people, and that I was acting in accordance with the letter as well as the spirit of the law, respecting fishing for cod with trap nets.

This appeared satisfactory enough but I may here remark that we cannot take too much precaution to ensure order and the quiet pursuit of their business, by our own people, next season. Indeed, strangers to the division met with such extraordinary luck, this year and last, that it will be a great inducement for them to repair there in greater numbers another season. It is even said that Newfoundland merchants decline to supply the fishermen, unless they bind themselves to fish in our waters. For this reason, I cannot too strongly impress upon the department the absolute necessity of appointing a good overseer at *Bradore Bay and Long Point*, in order to ensure the necessary protection to our people.

On the 21st October, the weather turned out bitterly cold. It snowed for three days, and in some places the ground was covered with snow twelve inches deep.

Bonne Esperance Division.

This division extends from Chicatica to Blanc Sablon. Mr. W. H. Whitely was the overseer in charge. He reports that salmon fishing was mostly a failure, owing to the quantity of ice which blocked the shores until the month of July. The same impediment was found to operate most injuriously with regard to cod fishing, it being impossible to set the traps until the month of July. In several localities, no fish at all were taken. Matters rather improved in the fall, and average trips were secured. Bait of all kind was abundant. Some vessels from Newfoundland were prevented by the ice, from calling in and paying their license fees, although it is probable that west of Bonne Esperance, several purposely evaded payment. The number of fishermen from Newfoundland resorting to this division is increasing yearly.

Prices were very low, but the residents are provided with ample necessaries of life for next winter.

On the 8th August, while the "Aberdeen" was engaged landing supplies for the lighthouse, I took occasion of this delay to visit the coves at Long Point and Bradore Bay, for the purpose of inquiring into the complaints of our people against fishermen from Newfoundland and elsewhere who repair to these localities during the months of June and July. These poor people could hardly suppress their indignation in alluding to the absence of the Government steamer "La Canadienne," when her presence had been so much needed. It was reported that as many as 200 sails from Newfoundland had visited the division during the time of cod fishing.

Knowing that there would be no fisheries protection vessel there this summer, they behaved just as they pleased at Greenly Island, Long Point, and Bradore Bay, cutting the residents' trap-nets, driving them out of their stations, crowding them on every side with their own traps, injuring them, by seining around the traps, or setting trawls across them; in fine, doing everything to prevent our people from getting their proper share of the schools of fish. I was informed that on a distance of about a mile and a half, there were as many as 150 traps; in fact, the place was so crowded with nets, that it would have been a difficult matter for a schooner to enter Bradore Bay harbour.

The shores about Long Point and Bradore Bay, as well as those between Greenly Island and Long Point, were full of fish for a month; but on account of interference, our own fishermen could only secure a few hundred quintals of fish, while the schooners from Newfoundland went away with full loads, caught under the most provoking circumstances. This, every one will admit, was hard to bear, especially in view of the fact that these people have nothing but their fishing to rely upon for a living. When they consider that they, the occupiers of the soil, who pay duty for the right of fishing, are at the mercy of a lot of strangers who have no vested rights there, but leave nothing but ruin behind them, they feel terribly sore over the matter.

I did all I could to explain how things stood, and led them to expect that another year, the Government might be prepared to send a suitable vessel for their protection at the right time. This somewhat mollified them, and I further assured them that, should it be my lot to be in command of the fisheries protection vessel next season when she is in these waters, I should make it a point to see that their property, their rights, and their interests were duly protected against the encroachments of their greedy neighbours.

The brutal behaviour of some Newfoundlanders nearly resulted in bloodshed in two instances. Our fishermen, resenting these encroachments on their privileges, hastily snatched their fire arms to shoot, but were happily prevented by the missionary.

With reference to the collection of fees from captains of schooners who visited these shores, it must be understood that most of them skipped without paying, except those mentioned in the list below, who gave their notes to the local fishery guardian, Mr. Le Gresley. These notes will be converted into cash as soon as possible and remitted to the department with other money. Mr. Le Gresley, who has had a good deal of trouble in collecting this money and trying to maintain order among the Newfoundlanders, might, with advantage, I think, be made a fishery overseer, at a salary of $50 or $60, with instructions to reside at Long Point and to direct his special attention to that part of the coast extending from Blancs Sablons to Bradore Bay. Such an appointment would, I am sure, be advantageous in more than one sense. It would facilitate the collection of money which otherwise becomes lost to the public treasury, and relieve the department of a great deal of responsibility. Mr. Le Gresley is a very respectable man, with a fair education, speaking both languages and of very energetic disposition. I have no doubt he would make a good officer, and such an appointment is absolutely necessary on this remote and most important part of the division of Bonne Esperance.

Had it not been for the drawbacks above referred to, our fishermen might have realized good profits with their trap-nets this season. Still, they succeeded in spite of all in making a fair catch of fish, especially in deep fishing for cod, and in seals. Herring were also plentiful and of the best quality.

I have the honour to be, sir,

Your obedient servant,

N. LAVOIE,
Fishery Officer.

SYNOPSES OF FISHERY OFFICERS' REPORTS IN THE PROVINCE OF QUEBEC (EXCLUSIVE OF THE GULF DIVISION) FOR 1897.

SOUTH SHORE, RIVER ST. LAWRENCE, FROM CAPE CHATTE TO POINT LÉVIS.

Overseer Fabien Marin, of St. Félicité, who replaced Johnny Joncas in the Matane district, reports that salmon was very scarce last year. This, he attributes to the non-appearance of small fish on that part of the coast. Angling in Matane River was consequently poor. As the white whales (belugas) were few in the Lower St. Lawrence, the yield of the weir fisheries was better than usual, not being disturbed by these voracious monsters of the sea. Cod was also more abundant than usual, and good fares were reported. Most of the catch is disposed of in the neighbouring parishes in the county of Rimouski. On one of his visits, this officer found the fish-pass in Price's mill dam so much gutted with wood débris that it completely obstructed the passage of fish. This was immediately remedied, and no further complaints reached him in that respect. The total value of the fisheries of this district is made up at $21,382, an increased value of nearly $4,000 over last year.

Overseer Ed. Thériault, who replaced L. E. Grondin, of Rimouski, states that the fishing operations of the season were quite satisfactory. Large quantities of herring were taken, all disposed of in Quebec and vicinity. Sardines were rather scarce, while shad gave an average yield. Few eels were captured. Smelts were plentiful; one man alone, with hook and line, realized nearly $100, by supplying with this delicious little fish a few families of strangers spending the summer at Rimouski. During the winter many poor individuals find this smelt fishery a highly appreciated boon. As sturgeon was noticed in the vicinity of St. Luce, some caught weighing over 400 lbs., preparations are being made for their capture next year. The regulations were well observed, no serious infractions came to his notice.

Overseer Zephirin Lavoie, who replaced H. Martin, of Rimouski, reports the catch of salmon as poor and that of shad as nil, but that of herring as very good. The decline of the former is attributed to high north-west winds prevailing during the fishing season. Considerable trout fishing is carried on the inland lakes, which are leased by different clubs; but he did not get any regular data of the quantity.

Overseer Nap. Levesque returns a somewhat decreased yield of fish in his district, which he attributes to unfavourable weather. The staple fish seems to be herring, of which nearly a quarter of a million pounds is reported fresh, besides 600 barrels cured. With the exception of parties fishing without licenses, no other violations came to his knowledge.

Overseer George Sirois, who replaces X. Pelletier for the Kamouraska district, also returns a diminished catch of fish in this division, but ascribed no reason for the same. Fifty-nine belugas (white whales) were captured at River Ouelle.

Overseer Ephrem Gagnon, who succeeded O. V. Beaubien, reports a falling off in the yield of salmon and shad, due to the scarcity of fish. All fishery stations were visited at low tide, and found to be set according to regulations in view of protecting young fish. He seized three fisheries for non-compliance with the law. They were raised and disposed of to pay expenses. A few mill-owners still allow sawdust and rubbish to escape from their mills which might be injurious to fish life.

NORTH SHORE, RIVER ST. LAWRENCE, FROM QUEBEC TO BERSIMIS.

Overseer L. P. Huot reports a very poor catch of salmon and that of shad was much inferior to the previous one, but eels were plentiful. The other kinds of fish yielded about an average catch. The whole yield, valued at $15,000, is disposed of on the Quebec and Lévis markets.

Overseer Ulysse Bhereur, of Charlevoix, states that fishing was poor in his district. The capture of capelin is used exclusively for fertilizing the soil. It is difficult to secure any reliable data of the quantity of trout caught in the back lakes of Charlevoix, but it is estimated at over 50,000 lbs.

Overseer L. N. Catellier, of Tadoussac, also reports the poorest run of salmon in net fishing, as well as angling in the salmon streams for the last six years. The product of the salmon net fisheries is disposed of on the Quebec market, while that of the weirs is for local consumption. The fishways on River à Mars and St. John River were kept in good order. The fishery regulations are well observed on the St. Lawrence River, where the fishermen are very particular about keeping the Sunday close-time. Unfortunately the same cannot be said of the Saguenay River, where poaching has been carried on to a large extent. The patrol-men seized several floating nets, and prosecutions were instituted against the offenders. Better steps will be taken next season to ensure a more efficient protection. The total catch is only valued at $17,275, which is a falling off of nearly fifty per cent from last season.

INLAND DISTRICTS.

Sherbrooke and Megantic divisions.

Overseer John McCaw, of Sherbrooke and vicinity, states that since a few prosecutions for illegal netting, Brompton Lake has been free from poachers; in fact, the law has been fairly well observed in all the district. Complaints are heard that certain dams across the St. Francis are still unprovided with fish-passes, and unless the mill-owners are compelled to place them in such dams, the fisheries in that vicinity will soon become depleted. That part of St. Francis River near Aylmer Lake is still filled with debris from a mill at D'Israeli. As no netting is allowed in these waters, this officer is of opinion that he should be empowered to seize nets on sight whether in use or not. He often notices nets drying on the side of a barn, which evidently have just been used, but he cannot touch them as they are not actually set to catch fish. Mr. McCaw claims that he often experiences difficulty in hiring suitable boats for the performance of his official duties, being sometimes entirely refused by parties presumably in sympathy with poachers.

Overseer Allan McLeod reports that more tourists and sportsmen visited the Lake Megantic district this summer than ever before. Several sporting clubs have been formed and farmers and settlers in the vicinity benefit by the sale of their produce to them, besides the help required as guides, etc. The only way to efficiently protect these waters from poachers is to patrol them every night during the lunge close season, otherwise it is impossible to secure a conviction, as people generally do not look upon illegal fishing as criminal, and will not volunteer information against poachers. Several gill-nets were confiscated and destroyed during the summer. The practice of allowing bark of pulp wood to escape in Chaudière River was stopped. Fish are certainly becoming more plentiful in the Megantic district of recent years.

Overseer Guy Carr, of Compton county, is pleased to report a marked improvement in the fisheries of the inland waters under his charge, especially trout and whitefish. To the high water in spring preventing fishing in the tributaries, as well as to the general observance of the close seasons must this amelioration be ascribed. Only about ten per cent of the fish caught is shipped to the United States, the remainder being used for home consumption. Although illegal fishing implements are less used than formerly, still quite a few nets were confiscated. The eight fishways in his district are kept in good order, but sawdust is still thrown in the tributaries of Massawippi Lake, to the detriment of fish life in that beautiful sheet of water.

Magog and Brome Divisions.

Allen Finlayson, officer in charge of the Magog Hatchery, remarks that lunge appeared in the spawning beds in the sonth end of the Lake Memphremagog from the 6th to the 8th October and at the north end of the lake not until the 18th or 20th of the same month. The fact that whitefish are now getting plentiful in the lake, must be credited to the fry placed therein by our hatchery, as it is stated none existed there before. As these fish do not take the hook, permits should be granted to capture them with nets at certain times and localities where it would not interfere with the lunge breeding grounds. The operations under these licenses should be under the immediate supervision of fishery guardians. It is this officer's opinion that such a step would tend to the better observance of the close seasons.

Overseer Hugel Ball, who has charge of the west side of Lake Memphremagog, states that its waters are becoming so well stocked with whitefish, perch, smelts, etc., furnishing such an ample food supply to lunge, that it gets indifferent to bait. This is the reason given for the small catch of that fish. They were late appearing on their spawning beds (15th October), remaining there until the 8th November. The guardians affirm that they were more plentiful on the shoals than ever noticed before. Very little poaching was attempted this season. Only two boats with illegal fishing implements were confiscated and one party was duly fined.

Missisquoi Bay.

Overseer P. E. Luke reports a considerable decrease in the catch of whitefish and coarse fish as compared with other years when seine fishing was allowed. Most of the catch is shipped to New York market. The close seasons were well observed, and no abuses came to his notice. The sawdust from Pike River mill is now saved for ice-houses, etc., instead of being thrown in as formerly.

Richelieu River Division.

Overseer Pierre Leveque, who succeeded Jas. Finley for the southern part of Richelieu River, states that most fishermen admit the decline of the fisheries in that district. Not only the yield is becoming less than formerly, but the size of fish is gradually diminishing. This result is attributed to the excessive use of hoop-nets of too small a mesh during the past few years. Nine-tenths of the catch is exported to the United States. If it is the intention of the authorities to continue the issue of licenses, this officer hopes that every licensee will be compelled to have attached to each fishing apparatus the number of such permit, the initials of owner, or any other sign or mark which will enable the officer to detect illegally used implements. Several illegal hoop-nets were seized, but the culprits were not discovered. No mill rubbish or deleterious substances are now thrown in the waters of this division.

Overseer J. O. Dion reports a considerable falling in the eel fisheries of the Richelieu River under his charge, especially the large weirs, some of which did not yield one-fifth of their previous catch. This result is ascribed to the high water prevailing, now that the rapids have been narrowed by 400 feet, by the recent construction of an immense dam. Dynamite explosions necessitated by this construction, no doubt disturbed and frightened the fish in the vicinity. Owing to the scarcity of eels, the other kinds of fish were more in demand and better prices were obtained. He noticed that many licensees did not avail themselves of the privilege of their permits and that several of them do not even know how to prepare their night-lines. Pickerel were rather abundant, but bass very scarce. Mr. Dion also advocates the marking of licensed implements as beneficial both to fisherman and officer. Fishermen who acted upon his suggestion of separating the different species of fish in their reservoir, found it advantageous as the fish lived longer and were kept in a better state of preservation. The use of wire netting in their reservoir would further improve them. He is against the use of wings to hoop-nets (verveux); he would rather favour the new kind of gill-nets with woollen cords, adapted to the capture of sturgeon, which are plentiful. The sheet of water above the new dam will soon become a sportsmen's resort for hook and line.

Beauharnois and Chateauguay Divisions.

Overseer W. H. De Witt reports an increase, especially in game fish, which is due to the water of Lake St. Louis remaining at a proper height for fishing purposes. The close seasons were fairly observed, but seining without licenses was still indulged in. A few seines were seized and destroyed. Being alone, he was unable to capture the parties seining at night. The mill-owners are complying with the regulations. About 80 per cent of the catch is shipped to United States the balance being used in the vicinity.

Overseer Z. Reid states that the fisheries of Chateauguay River improved considerably, owing to the fact that seining was curtailed in the vicinity. The increase would be better still, if night poaching could be entirely checked. He has been unable to discover any of them. The fishways of his district are satisfactory; a new one is required at Howick Mills. Mr. Reid favours the prohibition of the seine for a few years at least.

Overseer H. Barrette also complains of seining at night, especially in the river, to the detriment of the young fish. A couple of parties were prosecuted and fined for illegal fishing.

Overseer J. D. McMillan says that with the exception of eels, which show a small catch, owing to the fact that fishermen were not allowed to use a light as usual, the other kinds of fish yielded a fair average. The whole catch, excepting sturgeon, which is shipped to the Montreal market, is used for local consumption. The mill-owners have kept sawdust and rubbish from the streams. The five fishways in this district are in good state of repair.

Verchères Division.

Overseer Chas. Robitaille says that notwithstanding the low state of the water during the summer months, which was unfavourable to the use of seines, the yield of fish is larger than the previous one. The fishery laws are better observed by the net fishermen than by the numerous anglers who catch pickerel and bass regardless of close seasons. To prevent this, a continual guarding of the waters in vicinity of Bout de L'Ile would be necessary. A more friendly feeling between fishermen and officer now seems to prevail, which he hopes will be conducive to a better observance of the regulations. He did his utmost to prevent the destruction of young fish life by following the advice of Officer Riendeau in watching the mesh of the different kinds of nets. In visiting places where some nets were being manufactured, he found verveux (hoop nets) with a mesh less than one inch, these he ordered to be undone or destroyed.

Richelieu County and St. Francis River.

Overseer L. N. Piché thinks there has been a slight increase in the fisheries of St. Francis River, which he attributes to the better observance of the sawdust regulations. No fines were imposed for any violations of the Fisheries Act.

Nicolet Division.

Overseer Geo. Boisvert states that fishermen under the impression that the license system might be abolished, have a tendency to minimize their catch of fish to lessen their importance. The fish were not more plentiful than in other years, but they were of a larger size, especially sturgeon, shad and eels. About one-half of the catch is shipped to Montreal, Sherbrooke and Arthabaska, the balance being disposed of in the county. He apprehends that a great many more night lines are fished than licensed. River Becancour is blocked by a mill dam about four miles from its mouth, which, not being provided with a fish-pass, prevents the ascent of all fishes from the St. Lawrence. Besides, the owner of said mill allows the sawdust and debris to escape in the stream. Mr. Boisvert again urges the importance of properly marking the licensed fishing implements to facilitate the duties of the officers.

Berthier and Montcalm Divisions.

Overseer Gabriel Caron states that the results of the fishery operations are certainly less satisfactory than formerly. He is of opinion that as the water-level of the St. Lawrence gets lower, the fish recede to deeper water in the channels. He confiscated and destroyed fifty-six illegal nets, all of undersized mesh. This was a salutary lesson which will no doubt produce good results. Mr. Caron thinks that verveux or hoop-net fishing should not be allowed during July and August, as the high temperature of the water then either spoils the fish, which are lost to the fisherman, or the latter hastens to place on the market an unpalatable food. Seining is also considered as a destructive engine to fish by disturbing their ova.

Ottawa River Division.

Overseer D. Chenier reports a large increase in the yield of fish in the Ottawa waters as compared with the previous season. It is true that the number of licensed fishermen was considerably in excess of other years, but generally they were satisfied with the results. Pickerel and sturgeon were especially taken in large quantities. The close seasons were well observed.

PROVINCE OF QUEBEC—Gulf Division.

RETURN showing the Number and Value of Vessels and Boats engaged in the Fisheries, Fishing Materials, and the Kinds and Quantities of Fish, as well as the Number of Men employed in the Fishing Industry of the **County of Bonaventure**, Province of Quebec, for the Year 1897.

RESTIGOUCHE SUBDIVISION (Head of the Tide in the Restigouche to Maguasha).

Number.	Districts.	Fishing Boats.			Fishing Material.												Kinds of Fish.					Number.
					Gill Nets.			Seines.			Trawls.		Weirs.		Smelt Nets.							
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	
	Bonaventure County.		$				$			$		$		$		$						
1	Head of Tide to Maguasha	23	345	60	....	5050	5050								90	5400	46876	50				1
	CARLETON SUBDIVISION (Maguasha to Grand Cascapedia River).																					
1	Nouvelle	70	980	140	100	2400	1700	3	120	60							12940	200		650		1
2	Carleton	120	1600	200	250	5000	2500	20	600	200			4	30			14500	300		3000	1	2
3	Maria	150	2000	350	350	6000	2700	15	450	150			7	60			29500	350		2000	2	3
	Totals	340	4580	690	700	13400	6900	38	1170	410			11	90			56940	850		5650	3	
	BONAVENTURE SUBDIVISION (Big Cascapedia to Paspebiac Point).																					
1	New Richmond	20	200	25	60	900	300											140	1000	4000		1
2	Black Cape	18	180	24	72	1500	875										5314	110	500			2
3	Caplin	146	1620	158	280	5600	2800	14	430	280								800	3000			3
4	Bonaventure River	225	2875	275	450	9600	4500	56	1460	920	25	120					9600	1200	5000	15000		4
5	New Carlisle	36	380	40	90	1650	900	24	840	480	5	35					500	215	4000			5
6	Paspebiac	150	2250	225	300	6000	3000	28	980	575	78	350						600	1500			6
	Totals	595	7505	747	1252	25250	12375	122	3710	2255	108	505					15414	3065	15000	19000		

RETURN showing the Quantity and Value of Fish, &c.—County of Bonaventure—*Continued.*

RESTIGOUCHE SUBDIVISION (Head of the Tide in the Restigouche to Maguasha).

Number.	Districts.	Kinds of Fish.														Fish Products.			Total Value.	Number.
		Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Trout, lbs.	Smelts, lbs.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs	Squid.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Bonaventure County.																			
1	Head of Tide to Maguasha		80						12000	230900	25		61450		40			1000	26,622 70	1
	CARLETON SUBDIVISION (Maguasha to Grand Cascapedia River).																			
1	Nouvelle			120	16		5		300		2	2000	400		150	25	4	1500	5,289 50	1
2	Carleton	7800		30	4		2		60		5	9500	600		250	15	3	5000	9,471 00	2
3	Maria		5	325	46		5		500		30	3000	1500		400	150	15	6000	13,612 50	3
	Totals	7800	5	475	66		12		860		37	14500	2500		800	190	22	12500	28,373 00	
	BONAVENTURE SUBDIVISION (Big Cascapedia to Paspebiac Point).																			
1	New Richmond			40					600		2					10	10	500	1,158 00	1
2	Black Cape			15					400							4	4	700	1,965 00	2
3	Caplin	5280	5	750	3	1000										175	200	5000	10,223 50	3
4	Bonaventure River	3840	4	1800	5	1500	6		2400		5					450	500	10000	21,346 00	4
5	New Carlisle			200		100										50	50	4000	3,893 00	5
6	Paspebiac			2500	7		60									625	700	1500	14,652 50	6
	Totals	9120	9	5305	15	2600	66		3400		7					1314	1464	21700	53,238 00	

Return showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**County of Bonaventure**—*Continued.*

PORT DANIEL SUBDIVISION (Paspebiac Point to Point Maquereau).

Number.	Districts.	Fishing Boats.			Fishing Material.													Kinds of Fish.					Number.
					Gill Nets.			Seines.			Trawls.		Weirs.		Smelt nets.								
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.		Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	
	Bonaventure County.		$				$			$		$		$		$							
1	Hopetown	39	1455	86	35	700	600	8	192	110	30	300	....	....	....	...		5100	200	....	.....	....	1
2	Nouvelle	52	1300	137	60	1200	980	9	290	260	25	160	.. .	....	....	....		600	300	....	....	...	2
3	Shegawake	59	1180	83	65	1300	910	4	92	80	....	....	...	....	....	....		230	350	....	.....	...	3
4	Port Daniel	161	3220	234	161	3220	1932	18	432	450	60	300	...	....	....	....		28875	450	. . .	800	....	4
5	Anse aux Gascons	141	4230	235	190	3800	2600	21	504	560	80	800	....	...	....	....		4898	500	. ..	....	....	5
	Totals	452	11385	775	511	10220	7022	60	1510	1460	195	1560	....	...	....	...		39703	1800	.. ..	800	....	

TOTALS FOR THE COUNTY OF BONAVENTURE.

Number.	Districts.	Boats Number.	Boats Value.	Men.	Gill Nets Number.	Gill Nets Fathoms.	Gill Nets Value.	Seines Number.	Seines Fathoms.	Seines Value.	Trawls Number.	Trawls Value.	Weirs Number.	Weirs Value.	Smelt nets Number.	Smelt nets Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Number.
1	Restigouche Subdivision	23	345	60	....	5050	5050	...	....	....	....	...	....	...	90	5400	46876	50	... .	.....	...	1
2	Carleton do	340	4580	690	700	13400	6900	38	1170	410	....	...	11	90	...	....	56940	850	.....	5650	3	2
3	Bonaventure do	595	7505	747	1252	25250	12375	122	3710	2255	108	505	...	....	....	...	15414	3065	15000	19000	....	3
4	Port Daniel do	452	11385	775	511	10220	7022	60	1510	1460	195	1560	...	....	..	....	39703	1800	.. .	800	....	4
	Grand totals	1410	23815	2272	2463	53920	31347	220	6390	4125	303	2065	11	90	90	5400	158933	5765	15000	25450	3	

RETURN showing the Number and Value of Vessels, Boats and Fishing Material, &c.—**County of Bonaventure**—*Continued.*

PORT DANIEL SUBDIVISION (Paspebiac Point to Point Maquereau).

Number.	Districts.	Kinds of Fish.														Fish Products.			Total Value.	Number.
		Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Trout, lbs.	Smelts, lbs.	Eels, brls	Flounders, lbs.	Tom cod or frost fish, lbs	Squid, brls.	Coarse and mixed fish, lbs.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Bonaventure County—Con.																			
1	Hopetown	1200	...	400	5	...	20	20	...	...	...	...	...	20	...	280	100	300	6,439 00	1
2	Nouvelle	...	...	550	5	...	...	...	...	...	...	...	...	20	...	300	150	350	4,140 00	2
3	Shegawake	9552	...	660	...	...	...	10	...	...	...	...	...	8	...	400	300	400	6,820 90	3
4	Port Daniel	19186	...	2850	8	...	50	50	...	9000	...	...	...	100	...	1425	850	500	25,973 20	4
5	Anse aux Gascons	7008	...	3600	12	...	100	70	...	...	...	...	...	250	...	1900	960	250	22,493 70	5
	Totals	47746	...	8060	30	...	170	150	...	9000	...	...	...	398	...	4305	2360	1860	65,886 80	

TOTALS FOR THE COUNTY OF BONAVENTURE.

Number.	Districts.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Trout, lbs.	Smelts, lbs.	Eels, brls	Flounders, lbs.	Tom cod or frost fish, lbs	Squid, brls.	Coarse and mixed fish, lbs.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Total Value.	Number.
1	Restigouche subdivision	...	80	...	...	...	...	...	12000	230900	25	...	61450	...	40	...	...	1000	26,622 70	1
2	Carleton do	7800	5	475	66	...	12	...	860	...	37	14500	2500	...	800	190	22	12500	28,373 00	2
3	Bonaventure do	9120	9	5305	15	2600	66	...	3400	...	7	...	...	...	...	1314	1464	21700	53,238 00	3
4	Port Daniel do	47746	...	8060	30	...	170	150	...	9000	...	...	...	398	...	4305	2360	1800	65,866 80	4
	Totals	64666	94	13840	111	2600	248	150	16260	239900	69	14500	63950	398	840	5809	3846	37000	174,100 50	

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—Province of Quebec—*Continued.*

County of Gaspé.

GRAND RIVER SUBDIVISION (Point Maquereau to Barachois, Malbaie).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.										Kinds of Fish.			Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.					
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	
	Gaspé County.			$			$				$			$		$		$				
1	Newport	...	...	...	...	97	1945	185	136	2756	1760	7	230	150	...	...	70	680	5040	215	200	1
2	Newport Point	...	...	...	...	56	1950	138	90	1920	720	3	100	60	...	...	30	300	...	120	...	2
3	Grand Pabos	...	...	...	...	7	88	7	7	920	750	1	28	30	...	...	...	...	12600	20	...	3
4	Ste. Adelaide de Pabos	...	...	...	...	34	897	81	64	1152	350	2	75	27	...	...	10	120	1600	68	800	4
5	Little Pabos	...	...	...	...	26	350	52	30	540	150	...	...	...	...	...	5	30	1600	52	...	5
6	Grand River	...	...	...	...	94	3646	279	449	4682	2285	4	170	75	...	...	70	445	730	130	1200	6
7	Little River (East)	...	...	...	...	63	1542	190	196	2268	1000	3	120	75	...	...	40	500	...	120	...	7
8	Cape Despair	...	...	...	...	18	580	22	24	480	240	1	30	25	...	...	7	175	...	44	...	8
9	Cape Cove	...	...	...	...	71	2944	152	112	2825	938	2	70	60	...	...	12	240	...	196	...	9
10	Anse à Beaufils	...	...	...	...	46	2316	102	82	1715	720	3	90	70	...	...	6	80	1000	120	...	10
11	Red Head	...	...	...	...	12	120	15	20	400	200	1	25	20	...	...	...	...	...	10	...	11
12	Percé	...	...	...	...	111	3730	260	220	3784	600	3	77	47	...	...	...	...	700	350	...	12
13	Corner of the Beach and Cannes de Roches	...	...	...	...	58	1356	160	103	3620	1542	5	135	80	...	...	11	66	10943	71	...	13
14	Bonaventure Island	...	...	...	...	32	920	120	70	2500	700	...	...	...	...	...	...	...	...	20	...	14
	Totals	...	...	...	...	725	22384	1763	1603	29562	11955	35	1150	719	...	...	261	2636	33313	1536	2200	

RETURN showing the Quantity and Value of Fish, &c.—**Province of Quebec**—*Continued.*

County of Gaspé.

GRAND RIVER SUBDIVISION (Point Maquereau to Barachois, Malbaie).

Number.	Districts.	Kinds of Fish.											Fish Products.						Total Value.	Number.
		Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod, tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	$ cts.	
	Gaspé County.																			
1	Newport	....	7104	3800	4	....	55	29	3600	....	55000	....	270	....	3060	1150	680	....	25,936 05	1
2	Newport Point	....	12480	3970	8	....	70	65	....	....	....	....	174	....	3380	2300	....	....	24,452 25	2
3	Grand Pabos	....	3640	....	....	....	....	....	....	1000	....	....	....	....	....	....	....	....	3,378 00	3
4	Ste. Adelaide de Pabos	....	....	1780	....	....	2	....	500	1600	....	....	72	....	1080	310	....	....	8,941 00	4
5	Little Pabos	....	....	468	1	....	....	....	....	....	....	....	26	....	580	130	....	....	2,883 00	5
6	Grand River	....	....	4460	....	....	....	....	1200	9000	135600	....	150	....	4000	750	....	....	28,805 00	6
7	Little River (East)	....	....	3500	....	....	45	60	2500	....	....	....	95	....	2400	500	....	....	16,850 00	7
8	Cape Despair	....	31152	1500	1	....	....	....	....	....	....	....	30	....	1200	70	....	....	13,001 40	8
9	Cape Cove	....	....	5510	3	....	....	5	....	....	189000	....	134	....	4200	695	....	....	35,153 75	9
10	Anse à Beaufils	....	....	3150	2	....	....	3	....	....	....	....	90	....	2570	350	....	....	14,962 75	10
11	Red Head	....	....	200	1	....	....	....	....	....	....	....	10	....	160	50	....	....	1,013 00	11
12	Percé	....	13500	7500	2	....	24	2	800	....	163400	....	320	....	8500	950	....	....	47,841 50	12
13	Corner of the Beach and Cannes de Roches	....	12666	2004	....	....	....	....	....	....	45000	....	48	....	2020	400	....	....	16,489 80	13
14	Bonaventure Island	....	....	3500	....	....	50	....	....	....	....	....	110	....	1358	300	....	....	15,527 40	14
	Totals	....	80542	41342	22	....	246	164	8600	11600	588000	....	1529	....	34508	7955	680	....	255,234 90	

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Continued.*

GASPÉ SUBDIVISION (Barachois, Malbaie, to Cap des Rosiers).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.											Kinds of Fish.			
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.						
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.		Salmon, fresh, lbs.	Herring, salted, lbs.	Herring, smoked, lbs.	Number.
	Gaspé County—Con.			$			$				$			$		$		$					
1	Barachois					157	6990	179		1730	1630	10	400	380						2000	175		1
2	Malbaie					56	1800	70		1300	640	3	84	125						600	135		2
3	Point St. Peter					67	1660	92		2220	745	4	112	140						400	90		3
4	Chien Blanc					98	2560	106		1300	665	3	60	70						625	95		4
5	Seal Cove					30	500	28		650	400									1300	50		5
6	Douglastown					90	2950	140		1789	1160	8	240	140						2600	160		6
7	Sandy Beach					30	740	38		2100	2000									10500	70		7
8	Gaspé, North and South					39	400	43		3264	2280	15	300	750						19100	10		8
9	Peninsula					18	300	29		1960	1620									9480	35		9
10	Cape Ozo					28	350	38		1300	1085	1	20	6						6700	50		10
11	Little Gaspé					16	270	18		394	290									1215	30		11
12	Grand Grève and Shiphead					69	1500	71		1720	1110	7	280	200						4200	190		12
13	Cap des Rosiers					62	1200	84		900	230	3	60	40							400		13
						760	21220	936		20627	13855	54	1556	1851						58720	1490		

RETURN showing the Quantity and Value of Fish, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Continued.*

GASPÉ SUBDIVISION (Barachois, Malbaie, to Cap des Rosiers).

Number.	Districts.	Kinds of Fish.													Fish Products.				Total Value.		Number.
		Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	$	cts.	
	Gaspé County—Con.																				
1	Barachois	...	...	6450	...	...	...	...	...	1500	...	...	...	...	3000	2300	...	...	31,325	00	1
2	Malbaie	...	33548	5850	...	...	...	...	...	...	...	...	...	...	1900	1000	...	...	32,839	60	2
3	Point St. Peter	...	...	1600	...	...	...	...	...	...	...	...	...	...	950	790	...	...	8,310	00	3
4	Chien Blanc	...	9640	1425	...	...	...	...	...	...	...	...	...	...	800	550	...	...	9,189	00	4
5	Seal Cove	...	35622	300	...	...	...	...	...	...	...	...	...	...	120	110	...	...	8,985	40	5
6	Douglastown	...	...	1000	...	...	...	...	...	...	...	...	...	...	600	275	...	...	5,752	50	6
7	Sandy Beach	...	...	85	...	...	...	...	...	...	...	...	...	...	45	18	...	...	2,760	50	7
8	Gaspé, North and South	...	...	...	...	...	...	...	...	46826	...	...	...	...	...	...	...	...	6,201	30	8
9	Peninsula	...	...	90	...	...	...	...	...	...	...	...	...	...	45	45	...	...	2,487	00	9
10	Cape Ozo	...	...	250	...	...	...	...	...	...	...	...	...	...	90	90	...	...	2,702	00	10
11	Little Gaspé	...	...	120	...	...	...	...	...	...	...	...	...	...	65	85	...	...	990	00	11
12	Grand Grève and Shiphead	...	...	1750	...	...	...	...	...	...	...	...	...	...	600	400	...	...	9,380	00	12
13	Cap des Rosiers	...	...	1000	...	...	...	...	...	...	...	...	...	...	400	200	...	...	6,000	00	13
			78810	19929	...	...	...	...	...	48326	...	...	...	...	8615	5863	...	...	126,922	30	

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c. —Province of Quebec—*Continued.*

County of Gaspé—*Continued.*

FOX RIVER SUBDIVISION (Cape Rosier to Fame Point).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.										Kinds of Fish.			Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.					
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	
	Gaspé County—Con.			$			$				$			$		$		$				
1	Louise Cove	...	...	...	...	88	1,700	88	78	1,900	450	...	...	...	...	...	...	...	...	350	...	1
2	Jersey Cove	...	...	...	...	78	1,100	78	68	1,400	400	...	...	...	...	...	...	...	...	200	...	2
3	Trois Ruisseaux	...	...	...	...	40	600	40	40	1,000	250	...	...	...	...	...	...	...	...	150	...	3
4	Griffin's Cove	...	...	...	...	80	1,200	80	80	1,600	500	1	25	10	...	...	...	...	...	190	...	4
5	Fox River	...	...	...	...	160	2,400	165	150	3,000	900	4	125	70	...	...	...	...	...	400	...	5
6	Little Fox River	...	...	...	...	42	500	42	40	800	200	...	...	...	...	...	...	...	...	100	...	6
7	Little Cape	...	...	...	...	41	505	43	35	700	175	...	...	...	...	...	...	...	...	100	...	7
8	Grande Anse	...	...	...	...	8	85	8	4	80	20	...	...	...	...	...	...	...	...	35	...	8
9	Echourie	...	...	...	...	17	180	18	14	280	75	...	...	...	...	...	...	...	...	100	...	9
10	Pointe Jaune	...	...	...	...	18	160	23	22	400	110	...	...	...	...	...	...	...	...	100	...	10
11	Anse à Valeau	...	...	...	...	17	145	19	17	350	110	...	...	...	...	...	...	...	...	75	...	11
12	Fame Point	...	...	...	...	14	100	14	7	140	35	...	...	...	...	...	...	...	...	70	...	12
	Totals	...	...	...	...	603	8,675	618	555	11,650	3,225	6	150	80	...	...	...	...	...	1,870	...	

RETURN showing the Quantity and Value of Fish, &c.—Province of Quebec—*Continued.*

County of Gaspé—*Continued.*

FOX RIVER SUBDIVISION (Cape Rosier to Fame Point.

Number.	Districts.	Kinds of Fish.																Total Value.	Number.
		Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues & sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure brls.	Seal skins, No.		
	Gaspé County—Con.																		$ cts.	
1	Louise Cove		16,800	2,500	1				1,600				50	50	3,100	1,200	100		17,980 00	1
2	Jersey Cove			1,900	1				1,200				45	45	1,900	1,015	90		10,937 50	2
3	Trois Ruisseaux			1,000	1				800				20	20	1,000	600	60		6,040 00	3
4	Griffin's Cove			2,000	2				1,200				100	100	2,000	1,200	100		11,950 00	4
5	Fox River		25,500	4,500	6				6,000				200	200	4,500	2 450	250		31,710 00	5
6	Little Fox River			800					400				25	25	800	600	60		4,960 00	6
7	Little Cape			900	1				800				20	20	900	650	60		5,485 00	7
8	Grande Anse			300									5	5	300	100	10		1,615 00	8
9	Echourie			400									20	20	400	300	40		2,710 00	9
10	Pointe Jaune		3,400	550	1				700				20	20	550	350	50		4,195 00	10
11	Anse à Valeau			400									15	15	400	350	50		2,660 00	11
12	Fame Point			200									10	10	200	210			1,515 00	12
	Totals		45,700	15,450	13				12,700				530	530	15,950	9,025	870		101,757 50	

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Continued.*

MONT LOUIS SUBDIVISION (Fame Point to Rivière à Pierre).

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.										KINDS OF FISH.			Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.		Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.				
	Gaspé County—Con.			$			$				$			$		$		$				
1	Grande Etang					8	320	14	12	300	150	2	80	50						125		1
2	St. Yvon					23	920	40	40	1000	400								125	460		2
3	Petit Chlorydorme					17	510	33	38	950	380									285		3
4	Grand Chlorydorme					14	420	24	25	500	200								600	250		4
5	Petite Anse					15	250	26	26	600	225									200		5
6	Pointe Frigate					17	300	23	23	550	200									185		6
7	Petite Vallée					19	350	32	30	500	150									200		7
8	Grande Vallée					30	900	49	60	1500	600	1	30	30					500	500		8
9	Grande Madeleine					18	300	24	24	450	180								2000	125		9
10	Petite Madeleine					17	180	21	20	500	200									90		10
11	Manche d'Epée					12	120	14	14	300	100									50		11
12	Gros Mâle					22	350	35	25	500	200								1000	250		12
13	Anse Pleureuse					18	200	24	25	600	250								3000	200		13
14	Mont Louis					36	1500	50	55	2500	700	2	80	60					1800	400		14
15	Rivière à Pierre					12	125	20	20	400	150								900	60		15
	Totals					278	6745	429	437	11150	4085	5	190	140					9925	3380		

STE. ANNE DES MONTS (Rivière à Pierre to Cape Chatte).

Number.	DISTRICTS.	Vessels Number.	Vessels Tonnage.	Vessels Value.	Vessels Men.	Boats Number.	Boats Value.	Boats Men.	Gill Nets Number.	Gill Nets Fathoms.	Gill Nets Value.	Seines Number.	Seines Fathoms.	Seines Value.	Trap Nets Number.	Trap Nets Value.	Trawls Number.	Trawls Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	Number.
1	Claude and Ruisseau Rebourg					17	340	30	20	460	300								1200	100		1
2	Marsoui and vicinity					17	220	18	18	414	270								200	90		2
3	Ste. Anne des Monts					110	1200	167	167	4175	2500								1200	1016		3
4	Cape Chatte					48	590	83	70	1540	1000								1000	522		4
	Totals					192	2350	298	275	6589	4070								3600	1728		

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Continued.*

MONT LOUIS SUBDIVISION (Fame Point to Rivière à Pierre).

Number.	Districts.	Kinds of Fish. Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Cod, salted, brls.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
	Gaspé County—Con.																		$ cts.	
1	Grande Etang	...	...	515	...	...	...	10	200	...		...			...	100	...	...	2,755 00	1
2	St. Yvon	...	8640	1850	...	...	...	100	800		...	...	...	...	...	200	...	...	11,623 00	2
3	Petit Chlorydorme	...	...	1250	...	...	...	50	600	...		...	...	...	...	150	...	...	6,550 00	3
4	Grand Chlorydorme	...	10080	650	...	...	...	40	2000	...	...	...	...	...	...	60	...	...	6,126 00	4
5	Petite Anse	...	...	750	...	...	...	50	200	...	...	...	...	...	...	100	...	...	4,095 00	5
6	Pointe Frigate	...	...	560	...	...	...	60	400	...	...	...	...	...	...	80	...	...	3,290 00	6
7	Petite Vallée	...	...	600	...	...	...	40	200	...	...	...	...	...	...	75	...	...	3,432 50	7
8	Grande Vallée	...	2780	1400	...	...	...	75	200	...	...	...	...	...	...	200	...	...	8,763 50	8
9	Grande Madeleine	...	...	360	...	...	...	15	...	...	...	...	...	...	...	50	...	...	2,452 50	9
10	Petite Madeleine	...	...	185	...	...	...	20	...	...	...	...	...	...	...	50	...	...	1,225 00	10
11	Manche d'Epée	...	...	125	...	...	...	5	...	...	...	...	...	...	...	25	...	...	750 00	11
12	Gros Mâle	...	...	620	...	...	...	100	200	...	...	...	...	...	...	100	...	...	4,100 00	12
13	Anse Pleureuse	...	...	380	...	...	...	50	400	...	...	1	...	...	...	50	...	...	3,170 00	13
14	Mont Louis	...	...	800	...	...	...	150	800	...	...	2	...	...	...	100	...	...	5,785 00	14
15	Rivière à Pierre	...	...	260	...	...	...	50	400	...	...	...	...	...	...	40	...	...	1,685 00	15
	Total	...	21500	10305	...	...	...	815	6400	...	...	3	...	...	...	1380	...	...	65,802 50	

STE. ANNE DES MONTS (Rivière à Pierre to Cape Chatte).

Number.	Districts.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Cod, salted, brls.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
1	Claude and Ruisseau Rebourg	...	...	259	...	...	...	...	1300	...	...	...	...	...	600	...	...	...	1,986 00	1
2	Marsoui and vicinity	...	...	150	...	...	...	...	850	...	...	...	...	...	350	...	...	...	1,190 00	2
3	Ste. Anne des Monts	...	...	1341	...	...	...	...	2120	...	...	...	...	...	1000	...	...	...	10,180 00	3
4	Cape Chatte	...	...	549	...	...	...	...	3700	...	...	...	...	...	350	...	...	...	4,959 00	4
	Totals	...	...	2299	...	...	...	...	7970	...	...	...	...	...	2300	...	...	...	18,315 00	

RETURN showing the Number and Value of Vessels, Boats and Fishing Material, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Concluded.*

MAGDALEN ISLANDS SUBDIVISION.

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.										Kinds of Fish.			Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.					
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	
	Gaspé County—Con.			$			$				$			$		$		$				
1	Grosse Isle					36	900	72	100	300	450									1800		1
2	Old Harry					41	1025	80				2	200	250	1	250				1300		2
3	Grand Entry					93	2325	186	200	440	400				2	500				2000		3
4	Grand Etang					30	730	75												200		4
5	Little Brigg					14	350	40												40		5
6	Bryon Island					50	1130	150	500	1100	1000	1	75	75						1500		6
7	Wolfe Point					60	2400	180												600		7
8	South Beach					32	800	64	600	1320	400				1	125				400		8
9	Low Point					23	600	46	100	2000	600									500		9
10	House Harbour	8	360	1500	40	6	150	18												200		10
11	Grindstone					20	400	40				1	100	250	1	250				800		11
12	Hospital					7	140	14												150		12
13	Etang du Nord					61	1220	120	600	1200	1000	3	275	350						2500		13
14	Channel	2	97	500	10	40	1000	80				1	125	150						800		14
15	Amherst Island	3	95	1000	16	139	4170	346	1678	33560	8390	7	1000	2000						2813		15
16	Entry Island																			40		16
	Totals	13	552	3000	66	652	15340	1511	2267	39920	12240	15	1775	3075	5	1125				15643		

RETURN showing the Quantity and Value of Fish, &c.—**Province of Quebec**—*Continued.*

County of Gaspé—*Concluded.*

MAGDALEN ISLANDS SUBDIVISION.

Number.	Districts.	Kinds of Fish.													Fish Products.				Total Value.	Number.
		Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Cod, salted, brls.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	$ cts.	
	Gaspé County—Con.																			
1	Grosse Isle	200	63336	100	...	...	...	...	...	...	...	...	...	...	25	1000	...	200	25,024 70	1
2	Old Harry	200	68436	...	...	...	...	...	...	...	...	5	...	...	...	1300	...	...	23,887 20	2
3	Grand Entry	11	121920	150	...	...	...	...	...	...	...	5	...	...	40	2000	...	125	36,367 25	3
4	Grand Etang	400	3250	200	...	...	...	...	...	...	...	...	...	...	50	200	...	...	8,565 00	4
5	Little Brigg	125	2826	...	...	...	...	...	...	...	...	...	...	...	...	30	...	...	2,645 20	5
6	Bryon Island	400	42560	300	...	...	...	...	...	...	...	...	...	...	100	1400	...	1500	25,717 00	6
7	Wolfe Point	300	19200	...	...	...	...	...	...	...	...	...	...	...	...	600	...	...	11,640 00	7
8	South Beach	100	45600	50	...	...	...	...	...	...	...	...	...	...	15	380	...	...	12,994 50	8
9	Low Point	25	28800	75	...	...	...	...	...	...	...	...	...	...	20	400	...	...	9,041 00	9
10	House Harbour	10	12000	...	...	...	...	...	...	...	...	...	...	...	...	150	...	...	3,575 00	10
11	Grindstone	30	38400	...	...	...	...	...	...	...	...	...	...	...	...	600	...	1692	14,345 00	11
12	Hospital	100	16224	...	...	...	...	...	...	...	...	10	...	...	...	150	...	...	5,669 80	12
13	Etang du Nord	200	72000	350	...	...	...	...	...	...	...	15	...	...	100	2000	...	1200	33,480 00	13
14	Channel	100	48000	...	...	...	...	...	...	...	...	...	...	...	...	700	...	...	15,350 00	14
15	Amherst Island	969	121104	3216	...	...	550	...	15	10000	...	150	...	...	1115	1850	...	150	69,820 30	15
16	Entry Island	75	...	25	...	...	...	...	...	...	...	...	...	...	10	...	...	...	1,388 00	16
	Totals	3245	703656	4466	...	...	550	...	15	10000	...	185	...	...	1475	12760	...	4867	299,509 95	

RETURN showing the Number and Value of Vessels, Boats and Fishing Material, &c.—**Province of Quebec**—*Continued.*

TOTALS FOR THE COUNTY OF GASPÉ.

Number.	DISTRICTS.	FISHING VESSELS AND BOATS.							FISHING MATERIALS.											KINDS OF FISH.			Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.						
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Herring, salted, brls.	Herring, smoked, lbs.	
				$			$				$			$		$		$				
1	Grand River Subdivision	..	....	.....	..	725	22384	1763	1603	29562	11955	35	1150	719	..	....	261	2636	33313	1536	2200	1
2	Gaspé do	..	....	.....	..	760	21220	936	.	20627	13855	54	1556	1851	..	....	....	.....	58720	1490	....	2
3	Fox River do	..	....	.	..	603	8675	618	555	11650	3225	6	150	80	..	.....	....	...	.....	1870	...	3
4	Mont Louis do	..	...	....	..	278	6745	429	437	11150	4085	5	190	140	..	....	....	.....	9925	3380	.....	4
5	Ste. Anne des Monts do	..	....	..	..	192	2350	298	275	6589	4070	...	.....	......	..	....	....	..	3600	1728	.....	5
6	Magdalen Islands do	13	552	3000	66	652	15340	1511	2267	39990	12240	15	1775	3075	5	1125	....	..	......	15643	.....	6
	Totals	13	552	3000	66	3210	76714	5555	5137	119568	49430	115	4821	5865	5	1125	261	2636	105558	25647	2200	

RETURN showing the Number and Value of Vessels, Boats and Fishing Material, &c.—Province of Quebec—*Continued.*

TOTALS FOR THE COUNTY OF GASPÉ.

Number.	Districts.		Kinds of Fish.													Fish Products.				Total Value.	Number.
			Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.	Cod, tongues and sounds, brls.	Cod, salted, brls.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.		
																				$ cts.	
1	Grand River	Subdivision	....	80542	41342	22	....	246	164	8600	11600	588000	....	1529	....	34508	7955	680	....	255,234 90	1
2	Gaspé	do	....	78810	19910	....	...	....	....	....	48326	....	....	....	....	8615	5863	....	....	126,901 30	2
3	Fox River	do	....	45700	15450	13	...	....	....	12700	....	....	....	530	530	15950	9025	870	....	101,757 50	3
4	Mont Louis	do	....	21500	10305	....	815	....	....	6400	....	....	3	....	....	....	1380	....	.	65,802 50	4
5	Ste. Anne des Monts	do		....	2299	....	....	....	...	7970	....	....	...	.	....	2300	..	....	....	18,315 00	5
6	Magdalen Islands	do	3245	703656	4466	....	...	550	....	15	10000	....	185	.	...	1475	12760	. .	4867	299,509 95	6
	Totals		3245	930208	93772	35	815	796	164	35685	69926	588000	188	2059	530	62848	36983	1550	4867	867,521 15	

Return showing the Number and Value of Vessels Boats, and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Saguenay.

GODBOUT SUBDIVISION (Manicouagan to Jambons).

Number.	Districts.	Fishing Vessels and Boats.										Fishing Material.							Kinds of Fish.												Fish Products.				Total Value.
		Vessels.				Boats.			Gill Nets.			Seines.			Trawls.		Smelt Nets.																		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, salted, brls.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Squid, brls.	Coarse and mixed fish, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	
	Saguenay County			$			$				$			$		$		$																	$ cts.
1	Manicouagan....	1	22	300	2	7	500	10	21	650	650	...	...	...	..	....	1	50																	
2	Godbout...	...	...	...	..	26	520	21	40	1600	1600	2	250	150	1	35	..	..																	
3	Point des Monts & Trinity Bay.	1	10	400	2	24	480	19	42	1800	1800	1	60	50	2	70	..	..																	
4	Caribou	..	.	....	..	46	920	31	110	3300	3300	1	60	50	1	30	..	..	72912	8	426	3	1824	2261	13	13300	2114	5250	135	42	4825	110	181	641	27319 25
5	Point aux Anglais..........	1	23	500	2	57	1710	50	114	3420	3420	2	80	160	...	..	..	..																	
6	Pentecote and Cailles Rouges.	1	10	120	2	18	540	22	26	780	780	2	90	150	...	....	..	..																	
	Totals	4	65	1320	8	178	4670	153	353	11550	11550	8	540	560	4	135	1	50	72912	8	426	3	1824	2261	13	13300	2114	5250	135	42	4825	110	181	641	27319 25

Return showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Saguenay—*Continued.*

ST. AUGUSTINE SUBDIVISION (Coacoachoo to Chicatica).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Material.							Kinds of Fish.				Total Value.		Number.
		Vessels.				Boats.			Gill Nets.		Seines.			Trap Nets.								
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, salted, brls.	Herring, salted, brls.	Lobsters, preserved in cans, lbs.	Cod, dried, cwt.			
	Saguenay County—Con.			$			$			$			$		$					$	cts.	
1	Wolf Bay					7	128	14								½			115	467	50	1
2	do					4	100	4	80	80												2
3	Etamamu River					2	25	2	300	300												3
4	Pointe à Maurice					6	120	5	70	70									142	568	00	4
5	Harrington Harbour					60	1500	100	70	70	3	360	300	6	2400		127		3888	16,060	00	5
6	Whale Island					30	600	42	300	300	1	60	60	4	1600		166		2234	9,600	00	6
7	Mutton Bay					49	900	49	578	578	3	360	360	8	3200		642		3091	14,932	00	7
8	Tabatière					12	240	16	170	170	1	116	116	2	800		1084	27504	888	13,388	80	8
9	Lac Salé					1	20	1	120	120						½	2			15	50	9
10	Fondrie Fecteau					1	20	1	140	140						4			40	220	00	10
11	Kicarpwee					1	20	1	180	180						1				15	00	11
12	Poachasnoo					1	15	1	170	170						1			2	23	00	12
13	St. Augustine					5	100	8						1	300		1		95	384	00	13
14	L'Anse à Portage					2	40	4	180	180						3			32	173	00	14
15	Chicatica					4	80	7	240	150						2½	5		298	1,249	50	15
16	Sandy Islands					2	40	2	250	250						2				30	00	16
17	Dog Islands					5	100	5	400	300						7				105	00	17
18	St. Augustine River					1	20	1	140	140						8				120	00	18
19	Big Rigolet					1	20	1	130	130						1½				22	50	19
20	Romaine					4	80	4	320	320						12½	3½		72	489	50	20
21	Coacoachoo					4	80	4	60	60									436	1,744	00	21
	Totals					202	4248	272	3898	3708	8	896	836	21	8300	43½	2030½	27504	11333	59,607	30	

RETURN showing the Number and Value of Vessels, Boats and

County of

MOISIE SUBDIVISION

		Vessels and Boats.							Fishing Material.								
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		
Number.	Districts.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.
	Saguenay County.—Con.			$			$				$			$		$	
1	Jambons	1	21	600	4	4	150	8	4	200	158	1	175	300			
2	Ste. Marguerite					3	195	6	8	1200	950	1	40	75			5162
3	Carousel	2	66	1500	6	5	357	10	4	200	184	1	70	100			
4	Seven Islands	2	45	800	6	18	1300	36	12	1750	1600	2	70	120			15236
5	Moisie					20	1200	40	40	5520	5000	3	200	175			145000
6	Pigou	1	14	240	4	2	100	4	3	150	120	1	40	50			
	Totals	6	146	3140	20	52	3302	104	71	9020	8012	9	595	820			165398

MINGAN SUBDIVISION

Number.	Districts.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.
1	River aux Graines	1	12	300	2	11	450	30				2	66	120			
2	Chaloupe River					13	600	34				2	60	100			
3	Sheldrake					28	1400	40				2	70	400	2	1000	
4	Thunder River					40	2000	100				2	90	100	2	800	
5	Dock					5	250	12				2	30	50			
6	Ridge Point					3	150	8				1	30	75			
7	Jupitagan					4	200	10				2	100	100			
8	Magpie					68	2100	190				3	125	200			
9	St. John River					90	4500	200				3	200	300			30000
10	Long Point					23	880	62				2	125	200			
11	Mingan					1	100										
12	Romaine River					1	50										
13	Esquimaux Point	10	493	5500	70	132	12000	178				15	525	1200	3	600	
14	La Corneille																
	Totals	11	505	5800	72	419	24680	864				36	1421	2845	7	2400	30000

NATASHQUAN SUBDIVISION

Number.	Districts.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.
1	Watsheeshoo					4	60	4	3	60	30						
2	Pashasheeboo					4	145	7	2	40	20						
3	Nabissippi					3	160	6	6	200	80	1	30	10			
4	Agwanus					18	1080	31	10	300	120	2	90	110			
5	Isle Michon					1	20	1	1	100	40						
6	Natashquan Harbour					19	1000	50	7	150	50	2	100	150			
7	Little Natashquan	4	88	2000	22	23	1150	50	60	1600	500	2	75	150			8615
8	Natashquan River					11	200	25	75	3750	1050						40000
	Totals	4	88	2000	22	83	3815	174	164	6200	1890	7	295	420			48615

ROMAINE

Number.	Districts.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, fresh, lbs.
1	Romaine River					8	150	8		160	160						
2	Kegashka					6	180	8		70	70						
3	Coacoachoo					1	15	1		170	170						
	Totals					15	345	17		400	400						

Fishing Materials, &c.—**Province of Quebec**—*Continued.*

Saguenay—*Continued.*

(Jambons to Pigou).

Kinds of Fish.													Fish Products.					
Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod, salted, brls.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
																	$ cts.	
	50						29		2	800			80	10		15	473 75	1
							150		1	500	400		130	15		9	1,805 15	2
	34						200		3	400			157	18		40	1,130 10	3
	112						800		8	2112			420	25		50	7,212 40	4
							807		4	4000	1200		517	30		31	33,026 85	5
							58		1	400			50	5		7	313 25	6
	196						2044		19	8212	1600		1354	103		152	43,961 50	

—(Pigou to Natashquan).

Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod, salted, brls.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
							550			1000		8	585	200	15		2,815 00	1
							900			2000		10	605	300	20		4,480 00	2
2½							2000			800		20	1500	600	40		9,567 50	3
8½							1500			2500		30	1500	700	30		8,012 50	4
							200			200		5	200	200	10		1,205 00	5
							150			100		4	150	150	10		901 00	6
7½							240			200		5	200	200	15		1,480 00	7
12	30						4500			1000		30	3000	1600	40		21,840 00	8
							3400			1200		25	4600	3500	60		26,480 00	9
16							1600			3000		10	1575	1250	25		9,340 00	10
11																120	315 00	11
12											100						190 00	12
							3400			10000		40	2120	2000	40	500	19,041 00	13
10																	150 00	14
79½	30						18440			22000	100	187	16030	10700	305	620	105,817 00	

(Watsheeshoo to Ccacoachoo.)

Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod, salted, brls.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
					4800									40			1,020 00	1
					7200									40			1,500 00	2
4							180						150	45			892 50	3
23							1600	200		800			750	225			7,887 50	4
2½																	37 50	5
	10						1000	20		500			500	200			4,590 00	6
16½	150						1800	250		400			3800	300		740	12,950 50	7
14	20						160	30		200	350		100	60			9,180 00	8
60	180				12000		4740	500		1900	350		5300	910		740	38,058 00	

SUBDIVISION.

Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh, in shell, cwt.	Cod, dried, cwt.	Cod, salted, brls.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
13	3½						99				1150		80				744 00	1
							450						300				1,890 00	2
1																	15 00	3
14	3½						549				1150		380				2,649 00	

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Sagnenay.—*Continued.*

BONNE ESPÉRANCE SUBDIVISION (Chicatica to Blancs Sablons).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials							Other Fixtures.				Whole Fishing Gear.	Kinds of Fish.				Fish Products.		Total Value.
		Vessels.				Boats.			Gill Nets		Seines.			Trap Nets.		Smoke & Fish Houses.		Piers & Wharves									
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Value.	Salmon, salted, brls.	Herring, salted, brls.	Cod, dried, cwt.	Trout, lbs.	Fish oils, galls.	Fish as bait, brls.	
				$			$			$			$		$		$		$	$							
	Saguenay County.																										
1	Nabitippi, Bull Cove....	..	....	......	...	4	200	4	300	150	1	40	100	.	....	2	100	1	20	250	1	30	20	300	15	10	264 50
2	Rock Bay, Dog Islands...	..	....	......	....	14	600	25	700	550	4	160	400	5	1500	6	400	4	100	2450	2	100	300	1000	200	100	11940 00
3	Old Fort, Burnt Islands...	1	20	800	4	30	1400	60	700	600	5	200	450	6	1500	12	1200	10	1000	2550	1	40	2000	1000	1000	500	9325 00
4	Bonne Espérance.........	2	250	6000	14	35	2600	70	800	650	6	600	1500	10	3000	10	2000	5	1000	5150	4	20	3500	400	2000	1000	16280 00
5	Pigeons Island, Stick Point	1	53	1000	6	16	1000	24	600	400	4	340	800	5	1250	6	1000	2	500	2450	..	20	1500	800	1000	400	7060 00
6	Salmon Bay	..	....	......	...	40	2100	70	500	400	5	400	600	6	1500	20	2000	10	1000	2500	..	20	2500	1000	2000	1000	12280 00
7	Little Fishery, Five League	..	....	......	...	6	400	12	400	400	2	100	200	2	400	3	300	2	100	1000	.	50	150	800	100	100	1060 00
8	Middle Bay, Belles Amours	..	....	......	....	15	1000	40	300	200	4	400	800	4	800	4	400	4	200	1800	1	120	500	800	400	300	3145 00
9	Bradore Bay, Long Point..	2	150	3000	12	30	1500	60	2000	1000	4	200	400	8	1600	10	1000	12	800	3000	..	200	2000	1000	1500	600	10250 00
10	Greenly Island..	..	....	......	...	40	2000	100	1000	600	8	1000	2000	6	1400	10	3000	4	1200	4000	..	50	1500	...	1000	500	7250 00
	Totals.....	6	473	10800	36	230	13100	465	7300	4950	43	3440	7250	52	12950	83	11400	54	5920	25150	9	650	13970	7100	9215	4510	68854 50

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, &c.—**Province of Quebec**—*Continued.*

County of Saguenay—*Continued.*

ISLAND OF ANTICOSTI.

Number.	Districts.	Fishing Vessels and Boats.			Fishing Materials.						Kinds of Fish.								Fish Products.			Total Value.	Number.
		Boats.			Gill Nets.			Seines.															
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Salmon, salted, brls.	Herring, salted, brls.	Cod, dried, cwt.	Cod tongues and sounds, brls.	Halibut, lbs.	Trout, lbs.	Eels, brls.	Squid, brls.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.		
	Anticosti,		$				$			$												$ cts.	
1	Strawberry Cove	18	535	27	17	347	217	3	83	120	....	10	350	2	15	100	10	20	200	60	50	1,816 50	1
2	Becscie River	....	....	....	....	....	....	....	....	....	2	....	....	....	....	200	1	....	....	....	....	50 00	2
3	Chaloupe Creek	....	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	140 00	3
4	Fox Bay	3	180	6	6	120	78	....	....	....	....	20	105	2	15	....	5	....	60	15	....	612 00	4
5	Salmon River	....	....	....	....	....	....	....	....	....	12	....	....	....	....	....	....	....	....	....	....	180 00	5
6	Macdonald's Cove	15	900	30	30	600	360	....	....	....	....	30	525	3	20	....	..	....	300	65	....	2,439 50	6
	Totals	36	1615	63	53	1067	655	3	83	120	22	60	980	7	50	300	16	20	560	140	50	5,238 50	

RECAPITULATION

SHOWING the Number and Value of Vessels, Boats and Fishing Materials in the **County of Saguenay,** for the Year 1897.

TOTALS FOR SAGUENAY COUNTY (excepting Tadoussac District).

Number.	Districts.	Fishing Vessels and Boats.							Fishing Materials.																Number.
		Vessels.				Boats.			Gill Nets.			Seines.			Trap Nets.		Trawls.		Weirs.		Smelt Nets.		Hand Lines.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
	Subdivisions.			$			$				$			$		$		$		$		$		$	
1	Godbout	4	65	1320	8	178	4670	153	353	11550	11550	8	540	560	...	...	4	135	...	..	1	50	298	91	1
2	Moisie	6	146	3140	20	52	3302	104	71	9020	8012	9	595	820	...	...	...	...	...	...	...	...	...	...	2
3	Mingan	11	505	5800	72	419	24680	864	...	...	...	36	1421	2845	7	2400	...	...	...	...	...	...	864	864	3
4	Natashquan	4	88	2000	22	83	3815	174	164	6200	1890	7	295	420	...	...	...	...	...	...	...	...	580	365	4
5	Romaine	...	...	...	...	17	345	17	...	400	400	...	...	...	...	...	...	...	...	...	...	...	...	...	5
6	St. Augustine	...	...	...	...	202	4248	272	...	3898	3708	8	896	836	21	8300	...	...	...	...	...	...	...	...	6
7	Bonne Espérance	6	473	10800	36	230	3100	465	...	7300	4950	43	3400	7250	52	12950	...	...	...	...	...	...	...	...	7
8	Anticosti	...	...	...	...	36	1615	63	53	1067	655	3	83	120	...	...	...	...	...	...	...	...	148	59	8
	Totals	31	1277	23060	158	1217	45775	2112	641	39435	31165	114	7230	12851	80	23650	4	135	...	..	1	50	1890	1379	

TOTALS FOR GULF DIVISION—PROVINCE OF QUEBEC.

Number.	Districts.	Vessels Number.	Tonnage.	Value.	Men.	Boats Number.	Value.	Men.	Gill Nets Number.	Fathoms.	Value.	Seines Number.	Fathoms.	Value.	Trap Nets Number.	Value.	Trawls Number.	Value.	Weirs Number.	Value.	Smelt Nets Number.	Value.	Hand Lines Number.	Value.	Number.
1	County of Bonaventure	...	...	...	...	1410	23815	2272	2463	53920	31347	220	6390	4125	...	...	303	2065	11	90	90	5400	2655	1162	1
2	do Gaspé	13	552	3000	66	3210	76714	5555	5137	119568	49430	115	4821	5865	5	1125	261	2636	...	...	...	...	7276	2870	2
3	do Saguenay	21	1277	23060	158	1217	45775	2112	641	39435	31165	114	7230	12851	80	23650	4	135	...	...	1	50	1890	1379	3
	Grand totals	44	1829	26060	224	5837	146304	9939	8241	212923	111942	449	18441	22841	85	24775	568	4836	11	90	91	5450	11821	5411	

RECAPITULATION

SHOWING the Number and Value of Vessels, Boats and Fishing Materials in the **County of Saguenay,** for the Year 1897—*Con.*

TOTALS FOR SAGUENAY COUNTY—*Continued.*

Number.	Districts.	Lobster Plant.					Other Fixtures used in Fisheries.								Kinds of Fish.									Number.
		Canneries.		Traps.		Number of hands employed.	Freezers and Icehouses.		Smoke and Fish Houses.		Piers and Wharfs.		Tugs, Steamers and Smacks.		Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	
		Number.	Value.	Number.	Value.		Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.										
	Subdivisions.		$		$			$		$		$		$										
1	Godbout	1	400	50	50	5	16	445	2	45	....	....	....	....	72912	8	426	....	...	3	1824	....	....	1
2	Moisie	..	....	....	....	....	1	500	....	....	....	....	....	....	165398	...	196	....	...	....	....	....	2044	2
3	Mingan	....	....	....	....	....	....	....	....	....	17	7400	....	....	30000	79½	30	....	....	....	....	....	18440	3
4	Natashquan	3	600	615	630	14	1	100	67	5160	....	....	....	....	48615	60	180	....	....	....	12000	....	4740	4
5	Romaine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	14	3½	....	....	....	....	....	549	5
6	St. Augustine	1	300	110	220	28	....	..	....	....	....	....	....	....	....	43½	2030½	....	..	..	27504	....	11333	6
7	Bonne Espérance	..	....	....	....	....	....	..	83	11400	54	5920	....	....	....	9	650	....	....	....	....	....	13970	7
8	Anticosti	....	..	..	....	....	1	100	....	....	....	....	....	....	....	22	60	....	....	....	....	....	980	8
	Totals	5	1300	775	900	64	19	1145	152	16605	71	13320	....	....	316925	236	3576	.....	....	3	41328	....	52056	

TOTALS FOR THE GULF DIVISION—PROVINCE OF QUEBEC—*Continued.*

Number.	Districts.	Canneries, Number.	Canneries, Value.	Traps, Number.	Traps, Value.	Number of hands employed.	Freezers and Icehouses, Number.	Freezers and Icehouses, Value.	Smoke and Fish Houses, Number.	Smoke and Fish Houses, Value.	Piers and Wharfs, Number.	Piers and Wharfs, Value.	Tugs, Steamers and Smacks, Number.	Tugs, Steamers and Smacks, Value.	Salmon, fresh, lbs.	Salmon, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Herring, smoked, lbs.	Mackerel, salted, brls.	Lobsters, preserved in cans, lbs.	Lobsters, fresh in shell, cwt.	Cod, dried, cwt.	Number.
1	County of Bonaventure	9	2460	9895	6845	297	25	865	41	500	....	.....	..	....	158933	....	5765	15000	25450	3	64666	94	13840	1
2	do Gaspé	85	40550	106025	50675	1526	12	2110	....	.....	29	9354	16	260	105558	....	25647	..	2200	3245	930208	....	93772	2
3	do Saguenay	5	1300	775	900	47	19	1145	152	16605	71	13320	...	....	316925	236	3576	....	...	3	41328	....	52056	3
	Grand totals	99	44310	116695	58420	1870	56	4120	193	17105	100	22674	16	260	581416	236	34988	15000	27650	3251	1036202	94	159668	

RECAPITULATION

SHOWING the Kinds, Quantities and Values of Fish caught in the **County of Saguenay,** for the Year 1897—*Concluded.*

TOTALS FOR SAGUENAY COUNTY—*Concluded.*

Number.	Districts.	Kinds of Fish.														Fish Products.				Total Value.	Number.
		Cod tongues and sounds, brls.	Cod, salted, green, lbs.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, lbs.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.		
	Subdivisions.																			$ cts.	
1	Godbout	13	2261	...	...	...	13300	....	5250	....	...	...	...	135	42	4825	110	181	641	27,319 25	1
2	Moisie	19	....	...	...	...	8212	1600	....	....	...	...	...	....	....	1354	103	.	152	43,961 50	2
3	Mingan	...	...	...	...	...	22000	100	....	....	...	...	...	187	....	16030	10700	305	620	105,817 00	3
4	Natashquan	..	500	...	...	...	1900	350	....	....	...	...	...	....	....	5300	910		740	38,058 00	4
5	Romaine	...	...	...	...	...	...	1150	....	....	...	...	...	....	....	380	....	...	...	2,649 00	5
6	St. Augustine	....	....	...	...	...	....	....	....	....	...	...	...	....	....	...	....	....	....	59,607 30	6
7	Bonne Espérance	....	....	...	...	...	...	7100	....	....	...	...	...	....	....	9215	4510	....	....	68,854 50	7
8	Anticosti	7	....	...	...	...	50	300	....	....	16	...	...	20	....	560	140	50	...	5,238 00	8
	Totals	39	2761	...	...	...	45462	10600	5250	....	16	..	....	342	42	37664	16473	536	2153	351,504 55	

TOTALS FOR GULF DIVISION—PROVINCE OF QUEBEC—*Concluded.*

Number.	Districts.	Cod tongues and sounds, brls.	Cod, salted, green, lbs.	Haddock, fresh, lbs.	Haddock, dried, cwt.	Hake, dried, cwt.	Halibut, lbs.	Trout, lbs.	Smelts, lbs.	Pickerel, lbs.	Eels, brls.	Flounders, lbs.	Tom cod or frost fish, lbs.	Squid, brls.	Coarse and mixed fish, lbs.	Fish oil, galls.	Fish as bait, brls.	Fish as manure, brls.	Seal skins, No.	Total Value.	Number.
1	County of Bonaventure	111	......	2600	248	150	......	16260	239900	....	69	14500	63950	398	840	5809	3846	37000	.....	174,100 50	1
2	do Gaspé	35	815	..	796	164	35685	......	69926	588000	188	..	.	2059	530	62848	36983	1550	4867	867,521 15	2
3	do Saguenay	39	2761	...	....	....	45462	10600	5250	. . .	16	.....	.....	342	42	37664	16473	536	2153	351,504 75	3
	Grand totals	185	3576	2600	1044	314	81147	26860	315076	588000	273	14500	63950	2799	1412	106321	57302	39086	7020	1,393,126 40	

RECAPITULATION.

STATEMENT showing Yield and Value of the Fisheries of the **Gulf Division, Q.,** for the Season of 1897.

Kinds of Fish.	Quantity.	Price.	Value.
		$ cts.	$ cts.
Salmon, fresh in ice ..... Lbs.	581,416	0·20	116,283 20
do salted ..... Brls.	236	15 00	3,540 00
Herring do ..... "	34,988	4 00	139,952 00
do fresh ..... Lbs.	15,000	0 01	150 00
do smoked ..... "	27,650	0 02	553 00
Mackerel, salted ..... Brls.	3,251	15 00	48,765 00
Lobsters, canned ..... Lbs.	1,036,202	0 20	207,240 40
do fresh ..... Cwt.	94	5 00	470 00
Cod, salted, dried ..... "	159,668	4 00	638,672 00
do do green ..... Brls.	3,576	2 50	8,940 00
do tongues and sounds ..... "	185	10 00	1,850 00
Haddock, fresh ..... Lbs.	2,600	0 03	78 00
do dried ..... Cwt.	1,044	3 00	3,132 00
Hake ..... "	314	2 25	706 50
Halibut ..... Lbs.	81,147	0 10	8,114 70
Trout ..... "	26,860	0 10	2,686 00
Smelts ..... "	315,076	0 05	15,753 80
Pickerel ..... "	588,000	0 05	29,400 00
Eels ..... Brls.	273	10 00	2,730 00
Flounders ..... Lbs.	14,500	0 05	725 00
Tommy cods ..... "	63,950	0 05	3,197 50
Squid ..... Brls.	2,799	4 00	11,196 00
Coarse and mixed fish ..... "	1,412	2 00	2,824 00
Fish oil ..... Galls.	106,321	0 30	31,896 30
Fish used for bait ..... Brls.	57,302	1 50	85,953 00
do as manure ..... "	39,086	0 50	19,543 00
Seal skins ..... Pieces.	7,020	1 25	8,775 00
Total value in 1897	.....	.....	1,393,126 40
do 1896	.....	.....	1,674,586 03
Decrease	.....	.....	281,459 63

STATEMENT showing the Number of Vessels, Boats, &c., and Value of Fishing Material employed in the Fisheries of the **Gulf Division, P.Q.**, Season of 1897.

Description.	Value.	Total.
	$ cts.	$ cts.
44 vessels (1,829 tons)	26,060 00	
5,837 fishing boats	146.304 00	
8,241 gill-nets (212,923 fathoms)	111,942 00	
449 seines (18,441 fathoms)	22,841 00	
85 trap-nets	24,775 00	
568 trawls	4,836 00	
11 weirs	90 00	
91 smelt nets	5,450 00	
11,821 hand-lines	5,411 00	
		347,709 00
99 lobster canneries	44,310 00	
116,695 do traps	58,420 00	
		102,730 00
56 freezers and ice-houses	4,120 00	
193 smoke and fish-houses	17,105 00	
100 fishing piers and wharfs	22,674 00	
16 do smacks	260 00	
		44,159 00
		494,598 00

TABLE showing the Lobster Plant and the Number of Employees in the Lobster industry in the **Province of Quebec,** for the Year 1897.

Number.	DISTRICTS.	LOBSTER PLANT.				
		Canneries.		Traps.		No. of hands employed.
		Number.	Value.	Number.	Value.	
	County of Bonaventure.		$		$	
1	Restigouche district			45	45	2
2	Carleton do	1	500	650	350	11
3	Bonaventure do	2	290	1900	1900	62
4	Port Daniel do	6	1670	7300	4550	222
	Total	9	2460	9895	6845	297
	County of Gaspé.					
5	Grand River district	10	3550	17905	7465	256
6	Gaspé Bay do	6	2150	6700	5250	122
7	Fox River do	3	1500	2550	1275	49
8	Mont Louis do	3	1300	2500	2500	31
9	Ste. Anne des Monts district					
10	Magdalen Islands do	63	32050	75570	34185	1068
	Total	85	40550	105225	50675	1525
	County of Saguenay.					
11	Godbout district	1	400	50	50	5
12	Natashquan do	3	600	615	630	14
13	St. Augustin do	1	300	110	220	28
14	Anticosti do			not	given.	
	Total	5	1300	775	900	47
	Grand total	99	44310	116695	58420	1870

PROVINCE OF QUEBEC—EXCLUSIVE

RETURN of the Number and Value of Fishing Boats and Nets, Number of Men, St. Lawrence River, from Cape Chatte

Number.	Districts.	Fishing Materials.								
		Boats.			Gill Nets.			Brush or Eel Weirs.		
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.	Salmon, lbs.
			$				$		$	
1	Capucins	19	285	25	18	440	270	.....	....	.....
2	Mechins	44	680	60	61	1715	1210	.....	...	1260
3	Grosse Roche	26	312	34	32	765	480	....	.. ..	. ..
4	Ste. Félicité	39	390	49	53	1240	635	5	150	......
5	Matane (including river)	15	165	19	20	555	380	7	210	1200
6	Rivière Blanche	15	150	16	22	555	330	2	60	300
7	Sandy Bay	......	. . .	8	6	270	72	2	50	180
8	Métis	......	.....	20	12	540	144	9	225	1200
9	Ste. Flavie and Ste. Luce	......	......	15	7	335	84	9	225	1260
10	Pointe au Père	......	.....	7	3	135	36	4	100	950
11	Rimouski	....	......	12	4	180	48	9	225	550
12	Islet à Canuel	4	125	8	.....	.. ..	......	4	200	200
13	Notre-Dame Sacre-Cœur	8	160	16	......	...	.....	8	170	150
14	Rivière Haté to Bic	2	40	9	.....	.....	. ..	5	115	250
15	St. Simon and St. Fabien	2	40	8	1	50	40	3	75	245
16	Temiscouata County (including Isle Verte)	25	1800	68	4	160	20	66	5020	2080
17	St. André	......	......	26	......	......	.. ..	26	800	......
18	Kamouraska	......	.....	16	......	......	. ...	17	732	60
19	St. Denis	......	....	14	.....	.....	......	14	960	85
20	Rivière Ouelle	......	... ..	32	.....	....	.....	32	2100	......
21	Ste. Anne	.....	......	16	......	......	......	16	500	.... .
22	St. Roch and St. Jean	... .	... .	9	......	......	......	9	400	.. .
23	L'Islet	1	15	9	1	50	200	8	320	......
24	L'Isle aux Grues	......	......	20	.....	.. ...	......	20	2000	. ..
25	Cap St. Ignace	......	......	10	... ..	.....	.....	10	350	...
26	Montmagny	6	65	19	4	400	1870	15	700	20
27	Berthier	10	100	35	6	370	1450	32	1500	25
28	St. Valier	7	105	8	4	675	3750	4	300	65
29	St. Michel	8	85	6	5	335	3150	1	50	100
30	Beaumont	7	100	6	4	615	1600	2	75	100
31	Lévis	10	145	6	7	350	3200	.. ..	......	95
32	Inland waters	......	....	.....	....	......	.. ...	.....	....	......
	Totals	248	4762	606	274	9735	18969	339	17612	10375
	Values $	.....	......	.....	......	. .. .	......	....	....	2075

OF THE GULF DIVISION—*Continued.*

together with the Yield, Value and Kinds of Fish, &c., on the South Shore of the to Point Lévis, during the Year 1897.

KINDS OF FISH.												Belugas, No.	TOTAL VALUE.	Number.
Shad, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Pickerel, lbs.	Sturgeon, lbs.	Eels, lbs.	Sardines, brls.	Mixed and coarse fish, lbs.	Cod, lbs.	Halibut, lbs.		$ cts.	
....	140	38600	....	....	....	....	....	....	....	61900	1600	....	4,201 00	1
....	128	69700	....	400	....	....	....	....	....	100300	4700	....	6,986 00	2
....	77	47300	....	....	....	....	....	....	....	54200	3000	....	3,791 00	3
....	250	18600	....	....	....	....	....	....	35000	24400	2000	....	2,956 00	4
....	100	15000	....	600	....	....	800	....	100000	3000	....	....	2,048 00	5
....	130	15000	....	....	....	....	....	....	12000	11000	....	....	1,400 00	6
....	....	....	....	....	....	....	....	20	....	....	....	....	96 00	7
....	....	....	....	....	....	....	....	48	....	....	....	....	384 00	8
1500	....	....	....	....	....	500	....	40	....	....	....	....	492 00	9
800	....	....	....	....	....	....	....	25	....	....	....	....	313 00	10
9000	....	....	....	25000	....	....	1500	50	....	....	....	....	3,390 00	11
....	300	2400000	....	....	....	....	....	500	25300	....	....	....	26,993 00	12
....	150	1500000	....	....	....	....	....	100	20000	....	....	....	16,130 00	13
....	225	22000	....	....	....	....	....	175	13000	....	....	....	1,825 00	14
....	200	1500	....	....	....	....	800	50	1000	....	....	....	1,072 00	15
36440	590	236600	....	5000	....	2432	3570	307	3040000	....	....	....	39,509 52	16
650	42	23200	....	....	....	1260	3030	90	51000	....	....	....	1,476 40	17
30000	7	27200	....	....	....	1150	2100	50	220000	....	....	....	4,657 00	18
61330	....	87200	....	....	....	....	12060	42	56000	....	....	....	5,978 40	19
4500	....	80000	....	....	....	500	42180	....	31200	....	....	59	5,063 80	20
375	....	....	....	....	....	180	16530	....	800	....	....	....	1,033 10	21
....	....	....	....	....	....	....	16000	....	....	....	....	....	960 00	22
....	....	....	125	....	100	200	14200	....	300	....	....	....	882 00	23
....	....	....	....	....	....	....	30000	....	3000	....	....	....	1,830 00	24
....	....	....	....	....	....	....	20800	....	....	....	....	....	1,248 00	25
1800	....	....	2880	....	1200	21400	26950	....	1600	....	....	....	3,319 40	26
1600	....	....	2625	....	400	6010	75760	....	1000	....	....	....	5,247 20	27
9600	....	....	38415	....	725	5700	71038	....	1800	....	....	....	8,320 73	28
9500	....	....	3975	....	325	4700	55700	....	850	....	....	....	4,556 75	29
9600	....	....	1005	....	480	5200	35800	....	1800	....	....	....	3,178 40	30
16675	....	....	2130	....	920	1700	49000	....	1760	....	....	....	4,295 50	31
....	....	....	....	10000	....	....	....	....	....	....	....	....	1,000 00	32
193370	2339	4581900	51155	41000	4150	50932	477818	1497	3617410	254800	11300	59	....	
11602	9356	45819	4092	4100	208	3056	28669	4491	36174	12740	1130	1021	164,633 20	

Return of the Number of Fishermen, Value of Boats and Nets, as well from **Quebec to Bersimis,** in the **Province**

Number.	Districts.	Fishing Materials.							
		Boats.			Gill Nets.			Brush or Eel Weirs.	
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Island of Orleans.		$				$		$
1	St. Laurent	....	....	15	9	3150	1800	6	1200
2	St. Jean	....	....	15	4	600	900	11	2000
3	St. François, including Argentenay	....	....	26	....	....	....	26	2325
4	Ste. Famille	....	....	12	....	....	....	12	1500
5	St. Pierre	....	....	7	....	....	....	7	1400
6	Ste. Petronille	....	....	1	....	....	....	1	150
	North Coast.								
7	Ange Gardien and Chateau Richer	....	....	9	....	....	....	9	900
8	Ste. Anne de Beaupré	....	....	5	....	....	....	5	250
9	St. Joachim	....	....	24	....	....	....	24	1800
10	County Charlevoix	....	....	....	....	....	....	....	....
	Saguenay Division.								
11	St. Firmin	6	260	7	....	....	....	5	125
12	Tadoussac	6	225	8	3	430	260	1	25
13	Bergeronnes	4	75	4	4	425	250	1	20
14	Bon Désir	2	20	2	1	50	50	....	....
15	Escoumains	9	140	9	5	480	280	4	80
16	Sault au Mouton	3	60	3	....	....	....	3	60
17	Mille Vaches	4	80	4	1	100	125	3	60
18	Portneuf	4	80	4	4	375	225	....	....
19	Sault au Cochon	1	15	1	1	30	30	....	....
20	Islets Jérémie	4	80	4	4	300	200	....	....
21	Bersimis	2	30	1	1	80	50	1	20
22	Inland Waters	....	....	....	....	....	....	....	....
23	Lake St. John District*	....	....	100	....	....	....	....	....
	Totals	45	1065	261	37	6020	4170	119	11915
	Values $	....	....	....	....	....	....	....	....

* Estimated. In 23 include 90,000 lbs. ouananiche and 8,000 lbs. pike.

as the Quantity and Kinds of Fish, &c., on the North Shore of the St. Lawrence, of Quebec, during the Year 1897.

KINDS OF FISH.											FISH PRODUCTS.		TOTAL VALUE.	Number.
Salmon, lbs.	Shad, lbs.	Herring, salted, brls.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Sturgeon, lbs.	Eels, lbs.	Sardines, brls.	Mixed and coarse fish, lbs.	Beluga skins, No.	Fish oil, galls.		
													$ cts.	
105	4400	......	2400	....	3600	2016	. .	40200	.. ...	......	....	.....	3,277 80	1
95	1300	...	2520	... .	3360	1320	.....	32600	......	......	......	.....	2,589 40	2
.....	......	......	480	.. ..	1440	600	200	22800	......	600	....	.....	1,569 60	3
...	......	......	600	......	6600	2460	2600	18200	. .	3600	......	....	1,983 00	4
....	......	......	1800	.....	4200	1680	......	28200	....	....	....	......	2,256 00	5
......	....	.. . .	240	....	960	300	....	2400	.....	......	....	......	255 00	6
... ..	...	.... .	960	....	3840	1260	1600	7500	......	1600	......	... .	1,009 00	7
......	....	......	240	......	720	240	.. .,	1600	.. ..	.....	......	....	184 80	8
.....	......	....	.....	......	.....	......	.....	26050	.. .	......	......	......	1,563 00	9
1800	.....	35	....	51000	....	.....	.....	5800	10	32500	23	1150	6,740 00	10
400	.....	10	......	1000	. ..	......	....	......	....	150	75	3750	1,646 50	11
17000	......	5	......	3000	....	....	...	......	.. .	200	80	4000	5,242 00	12
8000	......	15	.....	500	.....	......	....	......	.....	....	20	1000	2,090 00	13
1000	. .	20	...	...	....	......	.....	......	.....	80	15	750	565 80	14
4500	......	30	.....	800	.... .	..... .	....	....	......	175	50	2500	2,051 75	15
. ...	.....	10	......	300	.....	.....	...	. ....	......	100	......	... .	71 00	16
3000	.....	15	.....	....	......	.....	....	....	....	300	.....	......	663 00	17
6600	.. .	20	.....	2000	...	......	......	......	. ..	150	.....	......	1,601 50	18
600	.. ...	... .	.....	200	......	.....	.....	.....	.....	.	. ...	....	140 00	19
4000	......	5	. ..	500	......	......	....	... .	.....	75	.....	......	870 75	20
1000	......	10	....	1000	...	......	......	.. ..	. ..	125	......	......	341 25	21
......	......	....	......	20000	. ..	...	....	. ...	......	......	......	.....	2,000 00	22
.....	......	....	15000	12000	....	41000	...	.. .	.....	50000	......	......	10,670 00	23
48100	5700	175	24240	92300	24720	50876	4400	185350	10	89655	263	13150	....	
9620	342	700	1939	9230	1978	2544	264	11121	30	897	1052	3945	49,381 15	

Return of Fishing Stations, Number and Value of Fishing Boats and Nets, Number extending from **Quebec City** to **Upper Ottawa** in the

Number.	Districts.	Fishing Materials.														
		Boats.			Gill Nets.			Seines.			Hoop-nets or verveux.		Night Lines.		Brush or Eel Weirs.	
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
			$				$			$		$		$		$
1	Sherbrooke and Megantic	(Angling, trolling and night lines.)														
2	Magog and Brome					do		do			do					
3	Missisquoi Bay........	12	100	42	....	....	....	16	1370	730	....	.. .	......	....	....	......
4	Richelieu River	94	860	94	...	....	..	18	500	450	116	920	3000	50	9	12000
5	Châteauguay and Beauharnois...............	96	1540	160	72	1540	200	24	730	550	....	....	9000	400	....	.....
6	Laprairie and Montreal..	39	390	60	2	50	5	16	480	320	....	....	2200	20	....	.....
7	Chambly and Verchères.	90	900	110	...	....	....	16	460	410	11	100	7300	73	....	.....
8	County Richelieu and St. Francis River........	164	1180	108	25	400	100	27	825	770	103	356	6200	150	5	100
9	Co. Yamaska and River *	40	300	96	10	110	40	42	375	200	120	450	20000	220	....	......
10	Co. Nicolet............	53	325	53	4	100	10	20	680	340	3	50	360	60	....	.....
11	Three Rivers †..........	6	100	12	...	....	....	7	70	50	....	....	......	...	....	... .
12	Berthier to Montcalm...	59	385	59	5	150	15	10	250	80	...	....	350	18	...	.....
13	Terrebonne.............	21	115	35	6	105	10	3	80	20	8	40	400	16	....	.....
14	Lake Two Mountains...	50	550	60	44	945	320	....	....	....	....	....	5000	90	....	......
15	Co. Soulanges & Isle Perrot	4	40	10	22	220	56	....	....	....	....	....	500	8	....	. ..
16	Ottawa River from Carillon to Pontiac	100	3360	115	175	3500	350	....	....	....	....	....	8500	20	...	.. ...
17	Gatineau Lakes *........	(Angling and trolling).														
	Total...	828	10145	1014	365	7120	1106	199	5820	3920	361	1916	62810	1125	14	12100
	Values........ $	....	....	....	...	....	...	....	...	....	....	....	.....	....	....	....

* Partly estimated. † Add 100,000 lbs. of tom-cods, valued at $5,000.

of Men, together with the Yield, Value and Kinds of Fish, &c., within the District
Province of Quebec, during the Year 1897.

Kinds of Fish.												Total Value.	
Shad, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Sturgeon, lbs.	Eels, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.	$ cts.	Number.
2000	10000	73300	6400	45850	54600	3250	200	1800	3000	....	32250	13,966 00	1
.....	1100	27000	18300	18500	....	.....	.....	500	27000	2000	8500	6,142 00	2
......	4350	......	.....	33150	.....	.....	....	.....	....	....	51700	2,522 50	3
...	.....	.....	2350	6500	20000	40	1700	40100	30300	1050	132300	6,076 40	4
.....	...	....	7900	11550	46200	6970	250000	31800	46550	26800	515000	27,466 20	5
14000	....	....	4000	9000	10000	4000	13000	15000	3000	....	25000	4,270 00	6
3800	...	......	2550	4400	6650	555	2450	14100	9620	2000	50500	2,277 60	7
10000	......	150	1675	48600	18400	2200	2500	15950	1000	1300	180000	7,010 00	8
....	750	......	2650	11250	10500	5800	4100	19950	400	....	154900	4,606 50	9
28000	4950	..	2340	2700	2500	1330	5820	22100	6500	9320	140000	6,034 60	10
6000	1700	1200	300	2400	3800	270	4130	....	....	....	10000	1,276 00	11
......	350	.....	.....	3500	5000	11000	7500	9500	....	3800	100000	3,159 00	12
4550	......	40200	400	1770	1950	480	450	500	2570	930	19150	4,864 50	13
3800	2500	1500	2550	7440	10800	4300	2800	2600	5000	32650	25900	3,230 00	14
...	....	.....	2300	2100	2300	3000	5800	1400	2000	....	12550	1,178 50	15
......	..	....	47570	56300	61000	28150	48900	21600	38570	47550	84600	17,933 70	16
....	9800	97500	13975	12800	....	.....	....	......	....	....	6500	17,357 00	17
72150	35500	240850	115260	277810	253700	71340	349350	196900	175510	127400	1548850	....	
4329	2840	24085	9221	13891	10148	4280	20961	11814	5265	2548	15488	129,820 50	

RECAPITULATION

Of the Yield and Value of the Inland Fisheries of the **Province of Quebec,** (exclusive of the **Gulf Division**) for 1897.

Kinds of Fish.		Price.	Quantity.	Value.
		$ cts.		$ cts.
Salmon	Lbs.	0 20	58,475	11,695 00
Shad	„	0 06	271,220	16,273 20
Herring, salted	Brls.	4 00	2,514	10,056 00
do fresh	Lbs.	0 01	4,581,900	45,819 00
Whitefish	„	0 08	110,895	8,871 60
Trout	„	0 10	374,150	37,415 00
Bass	„	0 08	139,980	11,198 40
Pickerel	„	0 05	332,836	16,641 80
Pike	„	0 04	261,700	10,468 00
Maskinongé	„	0 06	71,340	4,280 40
Sturgeon	„	0 06	404,682	24,280 92
Eels	„	0 06	860,068	51,604 08
Perch	„	0 03	175,510	5,265 30
Sardines	Brls.	3 00	1,507	4,521 00
Catfish	Lbs.	0 02	127,400	2,548 00
Mixed and coarse fish	„	0 01	5,255,915	52,559 15
Cod	„	0 05	354,800	17,740 00
Halibut	„	0 10	11,300	1,130 00
Beluga skins	No.	4 00	322	1,288 00
Ouananiche	Lbs.	0 06	90,000	5,400 00
Fish oils	Galls.	0 30	16,100	4,830 00
Total for 1897				343,884 85
do 1896				351,169 11
Decrease				7,284 26

STATEMENT

OF Fishing Materials in the **Province of Quebec** during the Year 1897, (**Gulf Division** excluded).

Articles.	Value.	Total Value.
		$
1,121 fishing boats (1,881 men)	15,972	
676 gill-nets (22,875 fathoms)	24,245	
199 seines (5,820 fathoms)	3,920	
		44,137
361 hoop-nets	1,916	
62,810 hooks	1,125	
472 brush or eel weirs	41,627	
		44,668
Total value		88,805

RECAPITULATION

OF all Fishing Vessels and Boats and other Fishing Materials employed in the whole **Province of Quebec** for the Year 1897.

Articles.	Value.	Total Value.
	$	$
44 fishing vessels (1,829 tons ; 224 men)	26,060	
6,958 fishing boats (11,820 men)	162,276	
8,917 gill-nets (235,798 fathoms)	136,187	
648 seines (24,261 fathoms)	26,761	
		351,284
361 hoop-nets	1,916	
85 trap-nets	24,775	
568 trawls	4,836	
483 weirs	41,717	
62,810 hooks	1,125	
91 smelt nets	5,450	
11,821 hand lines	5,411	
		85,230
99 lobster canneries	44,310	
116,695 traps (2,795 hands)	58,420	
		102,730
56 freezers and ice-houses	4,120	
193 smoke and fish-houses	17,105	
100 piers and wharfs	22,674	
16 smacks	260	
		44,159
Total value		583,403

RECAPITULATION

Of the Yield and Value of Fisheries in the whole **Province of Quebec** for 1897.

Kinds of Fish.		Quantity.	Price.	Value.	Total Value.
			$ cts.	$ cts.	$ cts.
Salmon, fresh in ice	Lbs.	639,891	0 20	127,978 20	
do salted	Brls.	236	15 00	3,540 00	
					131,518 20
Herring, salted	"	37,502	4 00	150,008 00	
do fresh	Lbs.	4,596,900	0 01	45,969 00	
do smoked	"	27,650	0 02	553 00	
					196,530 00
Mackerel, salted	Brls.	3,251	15 00	....	48,765 00
Lobsters, canned	Lbs.	1,036,202	0 20	207,240 40	
do fresh	Cwt.	94	5 00	470 00	
					207,710 40
Cod, salted, dried	"	159,658	4 00	638,672 00	
do do green	Brls	3,576	2 50	8,940 00	
do tongues and sounds	"	185	10 00	1,850 00	
do fresh	Lbs.	354,800	0 05	17,740 00	
					667,202 00
Haddock, fresh	"	2,600	0 03	78 00	
do dried	Cwt.	1,044	3 00	3,132 00	
					3,210 00
Hake, dried	"	314	2 25	....	706 50
Halibut	Lbs.	92,447	0 10	....	9,244 70
Trout	"	401,010	0 10	....	40,101 00
Smelts	"	315,076	0 05	....	15.753 80
Pickerel	"	920,836	0 05	....	46,041 80
Eels	Brls.	273	10 00	2,730 00	
do	Lbs.	860,068	0 06	51,604 08	
					54,334 08
Shad	"	271,220	0 06	....	16,273 20
Sturgeon	"	404,682	0 06	....	24,280 92
Sardines	Brls.	1,507	3 00	....	4,521 00
Whitefish	Lbs.	110,895	0 08	....	8,871 60
Maskinongé	"	71,340	0 06	....	4,280 40
Bass	"	139,9·0	0 08	....	11,198 40
Pike	"	261,700	0 04	....	10,468 00
Ouananiche	"	90,000	0 06	....	5,400 00
Perch	"	175,510	0 03	....	5,265 30
Catfish	"	127,400	0 02	....	2,548 00
Squid	Brls.	2,799	4 00	....	11,196 00
Tom cod	Lbs.	63,950	0 05	....	3,197 50
Flounders	"	14,500	0 05	....	725 00
Coarse and mixed fish	Brls.	27,691	2 00	....	55,383 15
Fish oils	Galls.	122,421	0 30	....	36,726 30
Fish used as bait	Brls.	57,302	1 50	....	85,953 00
do manure	"	39,086	0 50	....	19,543 00
Seal skins	Pieces	7,020	1 25	....	8,775 00
Beluga skins	No.	322	4 00	....	1,288 00
Total for 1897		....	....	....	1,737,011 25
do 1896		....	....	....	2,025,754 46
Decrease		....	....	....	288,743 21

APPENDIX No. 7.

MANITOBA.

REPORT ON THE FISHERIES OF MANITOBA FOR THE YEAR 1897, BY INSPECTOR R. L. TUPPER.

SELKIRK, 2nd January, 1898.

Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit to you my annual report for the year 1897, on the fisheries of Manitoba.

Again has a year passed without wreck or accident on the lakes, or loss of life in the prosecution of the fisheries.

As will be seen by the figures, the commercial companies—which were without change as to personal from the preceding year—put up a smaller quantity of whitefish—the great staple of these lakes—than in 1896. In that year's report, I reported the companies as restricting the catch to the requirements of the market, and also the beneficial results which had accrued from fresh fish (not frozen) shipments during the period of navigation on Lake Winnipeg. Every word written then can be re-read with profit to those interested in the fisheries, and there is little to alter in this report, to my previous one, except the actual catch and the changes naturally brought about by the building of the railway to a port on Lake Winnipegoosis, thus affecting the whitefish industry, and also the enhanced value of the sturgeon, which, owing to the overfishing in all parts of the world having depleted the different waters, has raised in value. Great care should be taken that our waters should not be allowed to be exploited for whitefish and sturgeon to such an extent as to deplete them, while their price obtained is so low. Sturgeon and its products have doubled and trebled in value, while the price of whitefish has decreased—no fish can replace the sturgeon—while the depletion of such lakes as Huron, Erie and Ontario of whitefish has been met with cheap salt water fish.

The immense number of refrigerator cars now used to transport meat, butter, cheese, eggs, &c., to the Atlantic and Pacific coasts, get a return freight of cod, haddock, bluefish, lobster, oysters, &c. I believe that nine dollars out of every ten dollars worth of fish consumed in Winnipeg comes from either one coast or another. If so, in Winnipeg, how much more in proportion must be the consumption in the larger cities south.

Respecting whitefish, none should be taken from Lakes Winnipegoosis, Manitoba, or that part of lake—— south of Berens Island in summer for export, only enough to supply a Manitoba market.

The conditions in the waters mentioned are entirely different from those obtained in the immense body of water in the northern end of Lake Winnipeg, where is found a perfect home for the whitefish, which is about the only fish which has no means of defence from its enemies, and, as the rabbit is fed upon by all predatory birds and animals, so all predaceous fishes feed on the whitefish when they can. The Indian calls the whitefish the "Ahlikim aik" or "deer of the waters," because his only mode of defence is flight. A jackfish, lying in ambush, can strike him as a hawk strikes a rabbit, but like the latter, if the whitefish gets under way, the pursuer goes hungry. In the north end of Lake Winnipeg, where this sheet of water is seventy miles wide there are immense feeding grounds of the best of whitefish food, where few other fish exist.

The pickerel and jackfish seldom go ten miles from shore, so these immense bodies of whitefish "live, move and have their being" undisturbed except from the nets of the fishermen during the months of June, July, August and sometimes September. Even then large areas have never had a net in, for the want of harbours; the fishermen being able to get all the fish they require near the harbours where they have freezers.

The only time these fish see an enemy is when they approach the shore to spawn in the fall, the jackfish and pickerel then fortify themselves for their winter's rest by taking in a supply of whitefish, and the suckers are on hand to gather in the ova as it is deposited, but there are comparatively few of these predatory fishes, because in this wide water, there are but few marshes and flooded lands in spring favourable to their breeding, and but few of the streams they can ascend to spawn. It is but a few miles up any stream on the east side of the lake until an impassable rapid is met, so the conditions for the reproduction of predatory fish are not favourable. The lake is not suitable for salmon-trout, the greatest enemy of the whitefish. In the southern part of Lake Winnipeg the whitefish has been gradually disappearing for some time, although for a number of years no summer fishing has been done; whether it is the foulness of the Red River (now but an immense sewer for the drainage of many large towns and cities) or from what cause, I am unable to determine. Pickerel seem increasing in this part of the lake, and with the sturgeon fishing, now constitute the principal part of the catch. The next in importance is catfish. Many angle all summer for these fish near the south end of the lake, the fish being in good demand at fair prices, in towns on the Mississippi.

Lakes Winnipegoosis and Manitoba are long narrow lakes full of points and islands, seldom in any place are they twenty miles wide, so that on any whitefish feeding ground a great part of the year, will be found the predatory species. About these lakes and particularly Winnipegoosis, there are large marshes and many streams, through an alluvial country where the breeding grounds are perfect and the food for the young limitless. Consequently these waters are crowded with coarse fish. The reason I am opposed to summer fishing on these waters, is because such fishing is carried on against the whitefish at a time that all the predatory fishes arein the marshes and up the streams consequently they are not caught. With winter fishing, when the ice forms and the coarse fish comes back to the lake, then, in pursuing whitefish, the coarser kinds are taken in large numbers, and those not used are taken ashore. One man, for instance, last winter, took ten tons of jackfish ashore, these fish would have eaten ten times more whitefish than he took out at the same time. Besides the banks of these lakes and those of the southern end of Lake Winnipeg, are now partly settled. These waters should be reserved for the actual settlers, and the professional fishermen confined to the north end of Lake Winnipeg, which is not nor will ever be settled, but its waters should be preserved for present and future supply, and its shores utilized for its forest and preserved for that. The great body of fish north of Berens Island is nearly equally distributed between the province of Manitoba and the district of Keewaytin, the boundary line crossing at George's Island—the principal fishing is done at Selkirk Island, though a fair amount is done at Reindeer and George's. Sturgeon are plentiful only on the Eastern or Granite shore of Lake Winnipeg. This lake being the dividing line between the old rock formation and the newer. Only limestone is found on the western shore. It is being found, though that on the chain of islands between Doghead and Berens Island there are many sturgeon. They do not frequent Lakes Manitoba or Winnipegoosis though there is no obstruction in the connecting rivers to prevent them going up and returning I have carefully watched the development of the sturgeon industry and tried to find out as near as possible the extent of shore it covered and to only issue the number of licenses that I was sure the water area could safely stand, always giving the resident Indians, if any, the preference. The result has been most satisfactory. The purchasers have put up ice at several points, and the fish are now brought in good condition for shipment, consequently commanding a better price.

Another year, I would advise that no license to fish for sturgeon be granted ten miles away from an ice supply.This regulation would prevent both dealers and fishermen from taking chances of wasting fish, as has been too often the case. The increase of the catch this year will be readily noticed, and I anticipate it will augment again next year, as the fishing extends farther north. With a properly regulated number of gill-nets and a strict exclusion of pound-nets, there is no reason why profitable fishing for sturgeon should not become a permanent industry. Licenses have been issued only for the amount I consider the lake should be fished and for the parts of the lake where proper facilities for handling the fish were to be had.

Of Lake Manitoba, Mr. Martineau, the Fishery Officer says: That during the year he visited and inspected the various stations in his district and found everything in a satisfactory condition. The regulations have been strictly obeyed and the disposal of offal and other noxious matter has been carried out in accordance with the instructions of the department. More fish would have been taken had there been a market. He recommends that, as the whitefish are full of spawn on the 1st of September, the close season commences Sept. 1st instead of October 1st. Mr. Martineau also asks that a hatchery be built on the lake.

LAKE WINNIPEGOOSIS.

Owing to the completion of the railway to this lake, an immense impetus to fishing was given and a great number of eastern fishermen flocked in and the settlers became alarmed. The domestic licenses intended for bona fide settlers alone, were being asked for by pretended settlers, and the lake would have been soon depleted. Many of these fishermen came back after having been refused a license. The department, on learning the facts, promptly restricted the licenses to 100, and then issuing only to actual settlers. This action gave great satisfaction to the people, and prevented the early depletion of this valuable body of water. Full reports regarding this matter, have been from time to time sent to headquarters. I would recommend the appointment of a fishery guardian at Winnipegoosis, the terminus of the railway and the shipping point for the lake. A great many sturgeon were brought down to the railway from Cedar Lake, on the Saskatchewan, in the North-west Territories. There are none of these fish in the Winnipegoosis.

ROCK LAKE DISTRICT.

About the usual amount of fish was taken out of these waters principally by hook and line. Along the streams some dams and weirs had been built, they were duly reported to the department and destroyed. A great many Dakotans come over to fish in these waters with hook and line through the ice. Pike is the principal fish caught.

RED RIVER.

Little fishing is done in the upper Red River, except two or three seine nets at Winnipeg for coarse fish. On the lower Red River quite a trade is done in catching catfish with hook and line for the Mississippi River towns. In early winter a good many jackfish and pickerel are returning to the lake from the upper streams.

LAKE WINNIPEG.

On the eastern side, Brokenhead to Doghead, pike and pickerel are increasing here, and whitefish seem decreasing. All Indians have been stopped fishing on whitefish feeding grounds for pike and pickerel and are now agreed to observe the regulations strictly. Sturgeon fishing was actively carried on and about 4000 lbs. of caviare made. On the west side of Doghead, fewer men than usual fished. Pickerel were plentiful and many tullibee were also taken. The law was fairly observed, but the overseer had to warn some of the fishermen as to leaving offal on the ice, North of Doghead the new overseer did not go over the winter fishing grounds, consequently I do not know how the law was observed except as to the commercial fishing in summer. I made personal inquiries however when I found he had not been there before the 1st of July, 1898, and satisfied myself that only licensees fished, and that the law was observed. No fishing is done in the larger portion of the lake for sale, except that of the commercial companies. A little scattering fishing in winter for whitefish; and pickerel and sturgeon in summer, is carried on the east shore. There was a large increase of sturgeon fishing. I only licensed residents, and near the Indian reserves at Berens River, Bloodvein, I only issued to the Indians of the reserve, much to their benefit and satisfaction. They all took out licenses and strictly observe the law. The Berens River chief personally sees that all nets are taken up Saturday; all offal disposed of, and only the proper number of yards of twine used. It has been found that sturgeon are in fair quantities at the Tamarac Islands and the industry is gradually creeping up the east shore, and will in a year or so have reached Playgreen Lake on the Nelson River. The close season for those fish should be changed from May 15th to June 15th as at present, to April 1st to June 15th, because there is a tendency to evade the law by catching the sturgeon at the earliest moment the mouths of rivers open and hold them in pounds until after the 15th of June. Not only is there a tendency by some greedy fishermen to do this, but during the close season nets can be secretly set and the fish placed in the pounds. It would require an expensive set of overseers to watch this. The simple way is to make the commencement of the close season before the ice has moved in the rivers, and declare that all pounds shall be open until the 15th of June. This will please the honest fisherman.

Taken as a whole the fishing industry of Manitoba for 1897 has been prosperous, but prices as for the last few years have been low. It seems to me no effort is made to supply the towns of Manitoba and the North-west Territories with our fish, where there surely must be a good market for at least winter caught fish, which small dealers can easily handle.

The fishermen of Lake Winnipeg were greatly pleased with the visit of your commissioner, Professor Prince last autumn, and trust this call may result in the changes necessary in the fishery regulations, as well as the placing of the hatchery on a proper working basis.

All of which is respectfully submitted.

I have the honour to be sir,

Your obedient servant,

R. LA TOUCHE TUPPER,
Inspector of Fisheries.

STATEMENT

OF the Yield and Value of the Fisheries of **Manitoba,** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Whitefish	Lbs.	3,363,863	0 05	168,193 15
Pickerel	"	1,343,048	0 04	53,721 92
Pike	"	639,973	0 01	6,399 73
Sturgeon	"	225,619	0 05	11,280 95
Perch	"	56,737	0 01	567 37
Tullibee	"	359,410	0 01	3,594 10
Catfish	"	92,664	0 01	926 64
Mixed and coarse fish	"	827,200	0 01	8,272 00
Home consumption	"	817,100	0 01	8,171 00
Total for 1897				261,126 86
Total for 1896				362,310 80
Decrease				101,183 94

STATEMENT of Fishing Materials in **Manitoba,** for the Year 1897.

Articles.	Value.
	$ cts.
11 fishing tugs (1,104 tons; 83 men)	94,100 00
591 fishing boats (968 men)	15,103 00
1,167 gill-nets (267,540 fathoms)	52,937 00
4 seines (363 fathoms)	540 00
33 freezers and ice houses	62,500 00
17 piers and wharfs	2,820 00
Total	228,000 00

MANI

RETURN of the Number and Value of Vessels, Boats and Fishing Materials, the Province of Manitoba,

Number.	DISTRICTS.	FISHING MATERIALS.													
		Tugs or Vessels.				Boats.			Gill Nets.			Seines.		
		Number.	Fathoms.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.
				$			$				$			$
1	Lake Winnipeg, commercial fishing...	9	1092	90800	76	18	5025	54	....	33840	5816	..	....	....
2	Lower part of Red River and Lake Winnipeg to Willow Point, west, and Brokenhead, east..............	..	....	....	..	46	595	60	.	9350	860	..	...	..
3	Lake Winnipeg, east of Brokenhead to Doghead	1	...	1800	4	98	1680	207	..	40900	4550	..	....	....
4	Lake Winnipeg, west side Willow Point to Doghead..........................	..		.....	..	40	400	50	..	12350	1395	..	....	...
5	Upper Red River..................	..	....	..	..	19	190	28	...	600	130	..	231	200
6	Rock Lake, Southern Manitoba......	..	..	....	..	...	.....	.....	....	200	70	.	...	...
7	South Lake Manitoba, Long Point to Totogan...................	..	...	....	..	15	75	47	75	20000	225	..	...	....
8	Little Saskatchewan River and Lake Saint Martin..............	..	...	....	.	10	180	15	60	1800	180	..	...	...
9	Lake Winnipegosis and Waterhen River............................	1	12	1500	3	63	778	145	....	21750	2175	1	33	40
10	The Narrows, Ebb and Flow Lake to Sandy Bay	..	....	..	.	122	4230	197	1032	28750	2536	3	99	300
11	Lake Winnipeg, north of Doghead...	..	...	..	..	160	1950	165	....	38000	35000	..	....	....
	Totals;......................	11	1104	94100	83	591	15103	968	1167	207540	52937	4	363	540

TOBA.

Number of Men employed, &c., with the Kinds and Quantities of Fish, in the for the Year 1897.

Other Fixtures used in Fishing.				Kinds of Fish.									Total Value.	Number.
Freezers and Ice-houses.		Piers and Wharfs.												
Number.	Value.	Number.	Value.	Whitefish, lbs.	Pickerel, lbs.	Pike, lbs.	Sturgeon, lbs.	Perch, lbs.	Tullibee, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.	Home consumption, lbs.		
	$		$										$ cts.	
19	52940	9	1600	2521354	51917	4044	....	....	....	....	....	....	128,184 82	1
....	....	....	....	....	65500	156000	4000	37500	....	....	54700	54000	5,842 00	2
3	760	1	20	44500	192300	67000	130000	6300	59100	37400	223600	351700	23,868 00	3
6	1200	....	....	21150	121500	4500	....	....	129600	....	125600	39000	8,904 50	4
....	....	....	....	4000	32000	....	....	....	....	....	13700	....	1,617 00	5
....	....	....	....	....	....	40000	....	....	....	....	10000	....	500 00	6
1	1500	....	....	50000	100000	150000	....	....	12000	....	....	9000	8,210 00	7
....	....	....	....	12000	6000	....		....	....	....	....	50000	1,340 00	8
1	600	1	100	391000	67250	71365	....	7000	....	....	345000	173000	28,203 65	9
3	5500	6	1100	156300	66850	104300	....	2300	91300	....	54600	140400	14,418 00	10
....	....	....	....	163559	639731	42764	91619	3637	67410	55264	....	....	40,038 89	11
33	62500	17	2820	3363863	1343048	639973	225619	56737	359410	92664	827200	817100	261,126 86	

APPENDIX No. 8.

NORTH-WEST TERRITORIES

REPORT ON THE FISHERIES OF THE NORTH-WEST TERRITORIES, FOR THE YEAR 1897, BY THE INSPECTOR E. W. MILLER.

Qu'Appelle, N.W.T., 2nd January, 1898.

Hon. Sir Louis H. Davies, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

Sir,—I have the honour to submit the following report on the fisheries of the North-west Territories for the year 1897, together with statistics of the catch of fish value of gear employed, &c.

In the more settled districts the regulations in regard to non-fishing in the close seasons, the use of nets of proper mesh, &c., are now fairly carried out with the result that the supply of fish does not show any sign of diminution, except in those lakes that the recent dry seasons have caused to shrink to such a degree as to leave their waters too alkaline or otherwise impure for the support of fish life. A great deal of illegal fishing is reported by some of the river guardians, large quantities of fish of the spring spawning varieties being taken by means of rudely constructed traps. These when removed by your officers, are easily restored, while it is extremely difficult to detect the constructors or operators. In the more remote lakes, which, with the growing scarcity of fur and game, have now become the main source of food supply to the Indians and half-breeds of the northern districts, it is satisfactory to note that those which had become most seriously depleted, are under the system of protection during the spawning season, established by your department, now showing signs of recovery. There is no doubt that our larger and deeper lakes possess great powers of recuperation, and that, if allowed a fair period of rest in the spawning season, they will continue to furnish for all time an immense quantity of food; and that of a nature forming a healthier and more suitable diet to the natives of the country than that on which they would, in case of its exhaustion, have to subsist.

Persistence in doing their fishing in one lake as long as there remain any fish to be caught is an unfortunate custom of some of the Indian families, and to this is attributed the utter exhaustion which has befallen some of the smaller lakes, particularly as the mesh of the net is made smaller and smaller with the increasing scarcity of fish. The efforts of your officers in such instances, have been to direct the fishermen to better stocked lakes which are often to be found in fairly close proximity, but there is sometimes much difficulty in getting them to move.

There have been many applications made by settlers for the stocking of some of the minor prairie lakes now devoid of fish, and much disappointment has been caused by the inability of the department to comply with these requests. The re-stocking of some of the depleted lakes is also a matter of very great importance and there is good reason to believe that if this were done, the Indians would be brought to better appreciate the work of the department, and would not only accord a more cheerful obedience but render more assistance in carrying out the necessary regulations.

As it has been determined that the vast distances from existing hatcheries present almost insuperable difficulties to the successful transportation of fry to the desired points, it is much to be hoped that the establishment of a fish hatchery within the Territories might soon become possible.

The establishment of an export trade in fish at Prince Albert has not been very successful in its local operation, the prices paid to the fishermen being scarcely enough to remunerate them properly for their labour. It is also unfortunate that owing apparently to railway freight considerations, fish should be shipped out of the Territories which would meet with a ready sale in territorial towns which now import fish from the great lakes and British Columbia.

The opening up of the Yukon gold fields has afforded a new source of employment to many of those who previously devoted much of their time to fishing; it has also largely diminished the number of train dogs to be found in the country, and consequently the amount of fishing in 1898 is likely to show a falling off. Inasmuch as this affects some of the districts in which the strain upon the fish-producing waters had become greatest, it should have a beneficial effect on the fisheries, by lessening the demand upon them. And the destitution among the people most dependent on the fisheries being lightened by the employment thus afforded some of them, a strict enforcement of the close seasons will be rendered possible.

The greatly lessened number of North-west Mounted Police retained in the Territories, has prevented that body from rendering so much assistance in the enforcement of the fishery regulations as given in former years, but where possible, both officers and men have afforded much useful aid.

In conclusion, it may be said that while the immensity of the territory to be covered, combined with the great expense and difficulty of reaching the more distant points, renders it impossible, at present, to bring more than a portion of the territorial waters under the immediate supervision of the officers of your department, yet those waters, which by the influence of settlement or the excessive demands made on them by the native population, have been found in more immediate need of oversight and protection, are now receiving it to a fair extent. Constant watchfulness and an extension of the force will, however, be necessary to cope with the constantly increasing work obligatory for the proper preservation of the territorial fisheries.

SYNOPSIS OF OVERSEERS' AND GUARDIANS' REPORTS.

PRINCE ALBERT.

Overseer R. S. Cook says that the regulations have been well observed and only one seizure of nets was made. The fisheries of Green Lake and the Beaver River have yielded much better results than last year, the total number of whitefish caught up to December 25th amounted to 45,000. The catch in the lakes north of Prince Albert, for export, has not been nearly so good, though there is no apparent reason for the falling off. The prices paid for fish on the ice were as follows:—

Whitefish, round	1½	cts. per lb.
do dressed	2	do
Trout, round	1½	do
do dressed	2½	do
Jackfish, with head off	1	do
Doré	2	do

"The visit of Professor Prince, the Dominion Commissioner of Fisheries, to some of the lakes in this district will result in much good. The spawning season of the whitefish varies greatly, and I see nothing for it but a local close season for the different lakes. In some lakes the present close season amply covers the spawning period, while in others the fish have not commenced to spawn at the expiration of the close season. He hopes that the department will try the experiment of re-stocking some of the depleted lakes of the district next spring. One hundred and thirteen free permits were issued to Indians and half-breeds, allowing them to fish for their own use only."

Guardian R. Morin, of Green Lake, reports that the people attempted to trade off fish caught under free permits, which, however, he stopped. Whitefish were still spawning on December 22nd. At Assiniboine Lake the fishing was very poor and not much done. Four nets were seized at Devil's and Long Lakes, being of very small mesh.

Guardian W. Cromarty is in charge of the Crooked Lake chain. These lakes are well supplied with pike, pickerel and other coarse fish, but were threatened with exhaustion by the immense quantities taken out of the connecting creeks at spawning time by means of traps. Fishing is now restricted to the legal means.

CALGARY AND MACLEOD DISTRICTS.

The fishing in these districts is mainly confined to the angling for trout in the many mountain streams. Control of this fishing is of course at present difficult and the total extent of catch not easy to estimate. The regulations in respect to the close season are enforced to some extent by the North-west Mounted Police and a special guardian resident at High River. It has not been found practicable so far to fully enforce the screening of the numerous irrigation ditches opened up of recent years, but it can scarcely be doubted that unless the waste of fish life, caused through the action of unscreened ditches, is checked, the abundance of trout now to be found in these western mountain streams will become a remembrance only. The owners of the smaller ditches generally comply with the requirements of the Act.

A small number of licensed fishermen operated on the Crow's Nest and Waterton Lakes and caught a fair quantity of whitefish and lake trout, which, however, are mostly consumed at home.

EDMONTON DISTRICT.

This district is under the charge of *Overseer Harrison Young* who is assisted by special guardians at Pigeon Lake, Lac la Biche and Lac Ste Anne. Pigeon Lake maintains its prominence as one of the best fishing lakes in the Territories. It has been well fished for several years, no less than 61 licensed fishermen being at work in 1897, so it is a good example of the benefit derived from a strict enforcement of the close season. Guardian Whitford reports the fish to be now as large, healthy and numerous as ever. The destitution prevailing among the half-breed population in the Lac la Biche and Lac Ste Anne districts led to the necessity of some relaxation in their favour, of the regulations regarding the close season at those lakes. A fair proportion of the spawning grounds were, however, fully protected. The great majority of the people were well satisfied, but at Lac Ste Anne six nets were taken, having been set in excess of the one net per family allowed to be used in the close season. At Beaver Lake, Overseer Young reports the fish, pike, pickerel, &c., with which it formerly abounded, to have been nearly killed out. They died either from want of air, owing to the ice not cracking as usual last winter, or on account of the shrinkage of water in this lake having left it too alkaline. Considerable fishing is reported to have been done at Lac la Nonne and Buck Lake, and guardians will be required at those points next season. Overseer Young reports that the whitefish in the lakes of this district are in general increasing, of which the enforcement of the close season, partial as it has been, is certainly the cause.

BATTLEFORD DISTRICT.

Fishing for domestic purposes is vigorously carried on at Jackfish and Turtle Lakes, which contain a good supply, both of whitefish and coarse fish. A resident guardian is about to be re-stationed at this point, with a view to the stricter enforcement of the regulations. It is found that Indians with permits allowing them to fish for their own use only, will barter away their winter's supply of fish and leave themselves more or less destitute of food, if the opportunity is allowed to be freely put before them.

LONG LAKE DISTRICT.

This lake is the most important fishing centre in the district of Assiniboia. In consequence of the very successful season here in 1896, the applications for licenses were very numerous, and thirty-nine were issued, exclusive of free permits.

Overseer John Foster reports, however, that the average catches this year were not so good, though the fish taken were of good size and quality. The fishing which is nearly all done in the winter, is confined to the southern end of the lake, and the upper portion, some twenty-five miles in length, is practically untouched. Distance from market prevents much summer fishing being done. Two nets were confiscated for breaches of the regulations, but in general, the latter are well followed by the fishermen. The overseer is of opinion that the spawning season is well covered by the close time now enforced here.

QU'APPELLE DISTRICT.

Guardian John Leader reports that the stock of pike, pickerel, tullibee, perch, &c., in the Qu'Appelle chain of lakes is well maintained and that a decided increase of whitefish is to be noted, especially in Qu'Appelle Lake. In the latter lake, from thirty to fifty whitefish were taken at a haul with a setting of 150 fathoms of gill-net. Perch exist in these lakes in large numbers, but are rarely taken, the five-inch mesh nets allowing most to escape. Tullibee are very numerous and of fine quality, being esteemed by many as nearly equal to whitefish. The regulations have been well observed; four nets, were seized, being set in violation of them. Six traps were destroyed by the guardian in the Qu'Appelle River. There was a small flow of water throughout the summer, and though the non-repair of the dam at Katepive allowed the waters in Mission and Katepive Lakes to become rather low, the water has remained in good condition. Immense numbers of fish passed up the fishway at Fort Qu'Appelle in May, a steady stream being observed for upwards of ten days.

Mr. Fitzgerald, Guardian of the Lower Qu'Appelle, reports that an enormous amount of fish is taken from the river at spawning time and through the summer by means of fish traps. The operators take care not to approach there when any stranger is observed to be about, and the guardian is of opinion that to make the land-owner responsible for traps erected on his lands is the only way to cope with this evil, unless a very much larger sum is expended in watching than can now be done. Round Lake has now a limited supply of whitefish, but Crooked Lake is one which, while formerly a good whitefish lake, has been so fished out in former days by the Indians on the adjoining reserve that it is practically without whitefish now and in great need of restocking.

CUMBERLAND DISTRICT.

This vast district lying along the lower Saskatchewan River has a population of from 4,000 to 5,000 Indians and half-breeds, who, with the gradual decline of the quantity of game and fur, have now become almost entirely dependent on the fisheries for their subsistence. It has not been deemed expedient to enforce the regulatious in their entirety in this district as yet, but as it becomes opened up, the protection of the fish must become a matter of vital importance. Licensed fishing for sale is confined mostly to the sturgeon fishing in Cedar Lake, but as this lake is generally held to be the water from which the Saskatchewan River receives its supply of fish, the development of the fishery at this point for export purposes is considered to be prejudicial to the interests of the resident population.

I am, sir,
Your obedient servant,

E. W. MILLER,
Inspector of Fisheries, N.W.T.

NORTH-WEST TERRITORIES.

RETURN of the Number and Value of Boats, the Quantity and Value of Fishing Materials. in the District of **Qu'Appelle,** North-west Territories, for the Year 1897.

Number.	Districts.	Fishing Materials.					
		Boats.			Gill Nets.		
		Number.	Value.	Men.	Number.	Fathoms.	Value.
			$				$
1	Long Lake	6	60	..	136	3,900	544
3	Qu'Appelle Lakes	15	275	....	56	1,200	280
2	Crooked and Round Lakes	...	...	.....	5	150	30
4	Moose Mountain Lakes	..	.....	....	10	300	60
5	Eagle Quill Lakes	....	.	..	14	240	50
		21	335	.....	221	5,790	964

RETURN of the Kinds and Quantity of Fish in the District of **Qu'Appelle,** North-west Territories, for the Year 1897.

Number.	Districts.	Kinds of Fish.					Total Value.
		Whitefish.	Pickerel.	Pike.	Tullibee.	Mixed and coarse fish.	
		Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	$ cts.
1	Long Lake	34000	5000	6000	...	7000	2,040 00
2	Qu'Appelle Lakes	7500	11000	10000	12000	20000	1,345 00
3	Crooked and Round Lakes	500	7000	10000	5000	28000	815 00
4	Moose Mountain Lakes	..	8000	10000	....	25000	690 00
5	Eagle Quill Lakes	6000	500	1200	...	2000	359 00
6	Fishing Lakes (N.)		10000	25000	.....	30000	1,100 00
7	Qu'Appelle River	.....	16000	16000	......	4000	1,200 00
	Totals	48000	57500	78200	17000	152000	....
	Values $	2400	1725	1564	340	1520	7,549 00

Return of the Number and Value of Boats, the Quantity and Value of Fishing Materials, &c., in the District of **Edmonton,** North-west Territories, for the Year 1897.

Number.	Districts.	Fishing Materials.				
		Boats.		Gill Nets.		
		No.	Value.	No.	Fathoms.	Value.
			$			$
1	Lac la Biche	40	600	133	3,990	532
2	Lac Ste Anne	30	450	120	3,600	480
3	Pigeon Lake	20	300	265	7,950	1,325
	Totals	90	1,350	518	15,540	2 337

Return showing the Kinds and Quantity of Fish in the District of **Edmonton,** North-west Territories, for the Year 1897.

Number.	Districts.	Kinds of Fish.					Total Value.
		Whitefish, lbs.	Pickerel, lbs.	Pike, lbs.	Tullibee, lbs.	Mixed and coarse fish, lbs.	
							$ cts
1	Lac la Biche	75,000	20,000	40,000	5,000	20,000	5,450 00
2	Beaver Lake (N.)	20,000	5,000	8,000	1,000	5,000	1,380 00
3	Stony, Trout, Island and Whitefish Lakes	60,000	....	20,000	8,000	20,000	3,760 00
4	Lac Ste. Anne and White Whale Lake	100,000	....	30,000	3,000	10,000	5,760 00
5	Lac la Nonne	10,000	2,000	4,000	......	....	640 00
7	Pigeon Lake	120,000	2,000	4,000	......	5,000	6,190 00
7	Lesser Lakes	15,000	5,000	10,000	3,000	20,000	1,360 00
	Totals	400,000	34,000	116,000	20,000	80,000	....
	Values $	20,000	1,020	2,320	400	800	24,540 00

RETURN of the Number and Value of Boats, the Quantity and Value of Fishing Materials, &c., in the District of **Prince Albert**, North-west Territories, for the Year 1897.

		FISHING MATERIALS.				
		Boats.		Gill Nets.		
Number.	DISTRICTS.	Number.	Value.	Number.	Fathoms.	Value.
			$			$
1	Green Lake	20	300	100	2500	500
2	Assiniboine Lake	15	250	200	5000	800
3	Deer, Trout, Montreal and Candle Lakes	30	400	350	8750	1400
4	Saskatchewan River	50	500	100	1200	300
	Totals	115	1450	750	17450	3000

RETURN showing the Kinds and Quantity of Fish in the District of **Prince Albert**, North-west Territories, for the Year 1897.

		KINDS OF FISH.							
Number.	DISTRICTS.	Whitefish, lbs.	Trout, lbs.	Pickerel, lbs.	Pike, lbs.	Sturgeon, lbs.	Tullibee, lbs.	Mixed and coarse fish, lbs.	TOTAL VALUE.
									$ cts.
1	Beaver River	180000							9,000 00
2	Green Lake	30000		25000	100000		5000	20000	4,550 00
3	Assiniboine Lake	15000			30000			12000	1,470 00
4	Devil's Lake	14000			8000			3000	890 00
5	Pelican Lake	9000			10000			5000	700 00
6	Doré and Dog Lakes	30000			50000			20000	2,700 00
7	Montreal and Bittern Lakes	25000			40000			10000	2,150 00
8	Sturgeon Lake	2000			6000				220 00
9	Can lle, Deer,*	84000	26000	3500	14200				5,889 00
	and Trout Lakes	15000	5000		10000				1,200 00
10	Saskatchewan River			2000	6000	40000		1000	2,190 00
11	Crooked Lake			1500	1800			4000	121 00
	Totals	404000	31000	32000	276000	40000	5000	75000	
	Values	20200	1550	960	5520	2000	100	750	31,080 00

* Exported to United States.

RECAPITULATION

Of the Number of Fishermen, Boats, the Quantity and Value of all Fishing Materials, and Kinds and Quantities of Fish &c., in the **North-west Territories**, for the Year 1897.

Number.	Districts.	Fishing Materials.						Kinds of Fish.							Total Value.
		Boats.			Gill Nets.										
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Whitefish, lbs.	Trout, lbs.	Pickerel, lbs.	Pike, lbs.	Sturgeon, lbs.	Tullibee, lbs.	Mixed and coarse fish, lbs.	
			$				$								$
1	Qu'Appelle	21	335	60	221	5,790	964	48,000	..	57,500	75,200	......	17,000	152,000	7,549
2	Macleod	4	60	6	12	360	50	2,000	15,000	......	10,000	......	....	....	1,050
3	Edmonton	90	1,350	250	518	15,540	2,337	400,000	.....	34,000	116,000	......	20,000	80,000	24,540
3	Battleford	....	....	....	....	....	.....	60,000	3,000	8,000	12,000	1,000	2,000	60,000	4,320
5	Prince Albert	115	1,450	300	750	17,450	3,000	404,000	31,000	32,000	276,000	40,000	5,000	75,000	31,080
6	The Cumberland and other districts	.	......	......	...	...	......	4,000,000	5,000	2,000,000	1,500,000	150,000	50,000	1,000,000	308,750
	Totals	230	3,195	616	1,501	39,140	6,351	4,914,000	54,000	2,131,500	1,992,200	191,000	94,000	1,367,000	....
	Values			..	.....	....	......	245,700	2,700	63,945	39,844	9,550	1,880	13,670	377,289

RECAPITULATION

Of the Yield and Value of Fisheries in the **North-west Territories**, for the Year 1897.

Kinds of Fish.	Quantity.	Value.
	Lbs.	$ cts.
Whitefish	4,914,000	245,700 00
Trout	54,000	2,700 00
Pickerel	2,131,500	63,945 00
Pike	1,992,200	39,841 00
Sturgeon	191,000	9,550 00
Tullibee	94,000	1,880 00
Mixed and coarse fish	1,367,000	13,670 00
Total for 1897		377,289 00
do 1896		383,232 00
Decrease		5,943 00

STATEMENT of Fishing Materials in the **North-west Territories.**

Articles.	Value.
	$ cts.
230 fishing boats (616 men)	3,195 00
1,501 gill-nets (39,140 fathoms)	6,351 00
5 freezers and ice-houses	100 00
Total	9,646 00

RECAPITULATION

OF the Yield and Value of the Fisheries of **Manitoba** and the **North-west Territories**, for the Year 1897.

Kinds of Fish.	Quantity.	Value.
	Lbs.	$ cts.
Whitefish	8,277,863	413,893 15
Pickerel	3,474,548	117,666 92
Trout	54,000	2,700 00
Pike	2,632,173	46,243 73
Sturgeon	416,619	20,830 95
Perch	56,737	567 37
Tullibee	453,410	5,474 10
Catfish	92,664	926 64
Coarse fish	2,194,200	21,942 00
Home consumption	817,100	8,171 00
Total for 1897		638,415 86
do 1896		745,466 00
Decrease		107,050 14

APPENDIX No. 9.

BRITISH COLUMBIA.

ANNUAL REPORT ON THE FISHERIES OF BRITISH COLUMBIA FOR THE YEAR 1897, BY JOHN McNAB, INSPECTOR.

NEW WESTMINSTER, B.C., 2nd January, 1898.

The Hon. Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit my annual report on the fisheries of British Columbia for the year 1897, together with tabulated statements of their yield and value, and synopsis of guardians' reports.

The past year was a phenomenal one in the Fraser River district, the catch of both salmon and sturgeon having been about double that of any previous year, 42,197,516 pounds of salmon were canned; and when to this is added the quantity cured by other methods than canning, and the quantity sold fresh, we get, as the output of the Fraser River for 1897, the immense aggregate of 44,654,716 pounds.

The grand total of the value of the fisheries for 1897, including the fur-seal skins, is $6,138,864.90, and the capital invested, $2,614,660.

In the latter part of the season 600,000 pounds of dry salted salmon were shipped to Japan. It is to be hoped this business will prove permanent, as it would afford an opportunity to turn to profitable account, fish which have heretofore been considered, commercially valueless. Of less importance, but worthy of mention, is the demand which has arisen for dried salmon, for dog food. The most suitable variety for the purpose are the *O. Keta*—or dog salmon all that could be cured has been bought at remunerative prices for shipment to the Yukon. The sturgeon fishery of the Fraser River has also become a very important industry, the more important as it affords winter employment to a large number of resident fishermen, who would otherwise spend their time in an idle or unprofitable manner. The proceeds of the industry for 1897 are upwards of $50,000; the fish are dressed and shipped to United States markets

For some years all the resources at my command were taxed to the utmost in preventing the rivers and lakes from being depleted of sturgeon by the use of trawl lines with hundreds of unbaited hooks, separated by spaces of but twelve or fourteen inches from each other. At present, however, many of the men who up to a year ago were persistent in the use of trawl lines, have not only abandoned illegal methods of fishing themselves, but are anxious to have it suppressed, as they find that sturgeon can be readily caught in nets having meshes from twelve to sixteen inches extension measure, and as they now realize the importance of the fishery, they are anxious that it should be perpetuated by using only such nets as will allow immature fish to escape.

The catch of salmon in the northern rivers was very small, less than half its former average; this must be owing either to over fishing, which, in regard to the Skeena, I do not think is the case, or to the destruction of parent fish in the spawning creeks, or of the young salmon when on their way from the lakes to the rivers in the spring or early summer, by Indians or others. The sockeye salmon—*O. nerka*—of the Fraser, Skeena and Naas Rivers are the same in every respect: but it is remarkable that in Rivers Inlet—about half way between the Fraser and Skeena, they are of a different variety or family and are the same as the Alaska sockeye, and what is more remarkable is that a small "run" of the same variety enters the Fraser every season about the 1st of May, and may be caught during about two weeks, near the mouth of Pit River, which they evidently enter, as they are never seen above that locality.

Halibut fishing for export to eastern United States markets is carried on systematically from Vancouver by the "New England Fish Co." Their exports during the year 1897 were upwards of one and a-half million pounds. Halibut fishing by this company is only prosecuted for about six months each year, beginning in October and ending in March; this is owing to the low price of the fish, and the risk of handling them during the warm weather.

Halibut of a fine quality abound in the northern coast waters of British Columbia and only await the opening up of accessible markets to become an important item, second only to salmon, in the fishing industry of this province. The New England Co. bought during this season, 1,200 barrels, or 240,000 pounds of herring from local fishermen for halibut bait.

The coast waters of British Columbia offer a rich and inciting field for enterprise. With the exception of salmon and halibut, their treasures though known to exist, have not been yet utilized, except to the very limited extent necessary for the supply of the home demand. Cod, ling, smelts, black cod, or *beshow* of the Indians, oolachans, anchovies, flounders, and a great variety of other valuable food fishes, are to be found in apparently limitless quantities.

Anchovies, *Stolephorus*, are very plentiful and are equal to the best French sardines, when put up as such. Of the black cod and oolachans, Mr. James G. Swan wrote in 1884: "All the evidence I have been able to collect from fishermen and my own observations show that the same species of fish, whether migratory or stationary, are richer in oil and other nutritious qualities the farther north they are taken. The black cod which is not considered worth eating at Monterey is considered at Cape Flattery one of the most delicious food fishes of the ocean, and at Queen Charlotte Islands, the natives procure from it great quantities of a peculiar fat, of the consistency of soft lard; this is used by the Indians as butter. The oolachans when taken in the Columbia River are not much fatter than a smelt, but when these fish are taken in the Fraser River, they are rich with fat, and are considered most delicious eating." The same remarks are applicable to the anchovy and other fish.

It is too soon yet to know what the result of the experimental transplanting of whitefish in the lakes, or of lobsters and oysters in the bays of British Columbia will be; I can only say, that the oysters, where protected from starfish and other enemies, are large, fat and healthy and that the small oysters which were attached to their shells have increased in size rapidly, but the question as to whether they will propegate in our waters is yet unsolved. The native oysters can, however, be much improved by judicious cultivation, and in my opinion, oysters much superior to any at present known in British Columbia waters will yet be found by dredging. In order to stimulate efforts in this direction, I beg to suggest that a free grant, or long lease, be given to the discoverer of an oyster bed, not in any part exposed at low tide.

The fisheries of the larger lakes in the interior of this province are becoming of more importance each year, consequent upon the large population of miners, and others attracted to their vicinity by valuable mineral discoveries, and special fishery regulations and measures of protection to the lakes, seem to be urgent; but in my opinion, before this can be done in a satisfactory manner, it will be necessary to ascertain by investigation the kinds and quantities of fish to be found in such important lakes as the Kootenay, Slocan and Okanagan, of which at present very little is known.

Only 41 vessels of the British Columbia fleet were engaged in fur sealing during the last season, and the value of other catches is but $304,100; the value of the catch of the previous year, $501.090, was a great falling off from previous years. The number of hands employed in all capacities in connection with the fisheries in British Columbia during 1897, was 19,854; sailors and hunters in sealing fleet, 1,082; grand total, 20,936.

During the year I confiscated three boats, and fined 29 persons for contraventions of the Fisheries Act and regulations. I also confiscated sturgeon trawl lines, having an aggregate of 18,000 hooks, these lines were seized by my guardians, in the Fraser and Pit Rivers. The protective service in the Fraser River district has been as efficient as it is possible to make it without a suitable steamer for patrol service in the lower reaches of the river, and the Gulf of Georgia, and I have the honour to submit that fisheries of such vast importance should have more efficient means of protection from poachers and foreign fishermen than can be supplied by one small steam launch, and an occasional hired tug, which are never found to have the speed, or sea-going qualities necessary for effective service. During the season I issued salmon fishing licenses for 4,501 boats and nets for commercial fishing, and 32 domestic licenses.

From *Rivers Inlet*, *Guardian Williams* sends the following report:—

"I have found the managers of seven canneries now in operation on the inlet extremely obliging in every respect, and anxious at all times to assist me in carrying out the fishery regulations. I am pleased to say that considering we have over 600 boats, or 1,200 fishermen, engaged fishing on the inlet this season, they have complied with the aforesaid regulations satisfactorily, and I have no serious cause for complaint. There is one matter which I consider my duty to bring before your notice, as I am satisfied it is of paramount importance to the salmon fishing industry on the inlet in the future. I beg to refer to the tidal boundary, as defined according to the regulations, viz.: "In Wannuck River, Rivers Inlet, from a line drawn north-west, from the Victoria Pack Co's. wharf to the opposite shore" (O.C. 28th September, 1889). This I consider should be moved at least 250 yards further down the river, for the following reasons: The Wannuck is a short narrow river, not more than three and a half to four miles long, from the mouth to the lake, and only about 400 yards wide at the mouth, quickly narrowing higher up; consequently a 200 fathom net reaches almost across, and sweeps the mouth of the river completely, as the tidal boundary as at present defined is about 250 yards up stream from the mouth.

From the *Skeena River*, *Guardian Wm. Roxburgh* reports as follows: Salmon fishing commenced about the 10th of June, the "run" was very light from the first, and disappointing to the canners and all concerned. Seven canneries were operated, and the pack was about half an average one. Something is wrong with the river, which is not apparent, at its mouth or on the lower reaches. The only fishing carried on in this district is for salmon, except seafish on the coast for domestic use. The new boat suits well for the purpose intended, *i.e.* patrolling the river. The regulations were well observed, and but few violations were reported.

From the *Naas River*, *Guardian N. Allan* reports that but two canneries were operated, the pack was about an average one; both canneries are owned by the same company, and no disposition was shewn to violate the regulations in any way. The Indians had secured a good supply of oolachans, and oolachan green, in the spring, and were well supplied. The river is greatly obstructed by snags, which cause great damage to nets, and which it is hoped the Government will render assistance to remove.

I have the honour to be, sir,

Your obedient servant,

JOHN McNAB,
Inspector of Fisheries.

B.—BRITISH COLUMBIA

Vessels.	Tons.	Masters.	Crews.		Boats.		British Columbia Coast.	
			Whites.	Indians.	Boats.	Canoes.	Males.	Females.
Agnes McDonald	107	M. F. Cutler	27	...	8	...	...	...
Ainoko	75	G. Heater	6	26	2	13	22	385
Allie J. Alger	75	R. A. Lavender	24	...	7	...	286	354
Amateur	18	C. Jipson	...	14	...	7	1	19
Annie E. Paint	82	A. Bissett	26	...	9	...	26	45
Arietis	86	P. Martin	6	27	2	14	96	71
Beatrice	66	W. Heater	4	25	2	12	103	55
Borealis	39	A. Nelson	20	...	6	...	...	...
Casco	63	C. LeBlanc	20	...	6	...	5	9
C. D. Rand	51	J. A. Townsend	21	...	6	...	147	155
C. G. Cox	76	W. D. Byers	26	...	8	...	62	110
City of San Diego	46	L. McGrath	6	18	1	9	39	22
Director	87	F. W. Gilbert	23	...	7	...	1	3
Dora Seiwerd	94	H. F. Siewerd	8	30	2	15	52	33
E. B. Marvin	96	C. J. Harris	9	32	2	16	154	123
Enterprise	69	J. W. Todd	8	26	2	13	21	17
Favorite	80	L. McLean	7	26	2	13	...	...
Fawn	58	M. Foley	6	30	1	10	29	22
Fisher Maid	21	C. Chipps	...	13	...	6	7	20
Geneva	93	W. O'Leary	20	...	6	...	...	...
Labrador	25	M. Pike	6	...	3	...	14	11
Mary Taylor	43	F. Cole	7	24	2	12	80	299
Mary Ellen	63	D. McPhee	24	...	7	...	123	167
Maud S	97	A. E. McKeil	7	20	2	10	...	...
Minnie	46	V. Jacobson	6	22	2	11	59	42
Mermaid	73	J. W. Andersen	22	...	7	...	12	139
Mountain Chief	23	J. Nawassum	...	16	...	8	5	7
Ocean Belle	83	R. Cox	7	23	3	11	130	37
Otto	86	J. McLeod	7	35	3	14	128	65
Pachwellis	19	J. Nyetam	...	20	...	10	9	15
Penelope	70	D. Macauley	6	25	2	12	89	30
Pioneer	66	W. E. Baker	24	...	7	...	216	392
Sadie Turpel	56	A. S. Crane	23	...	7	...	...	...
Sapphire	109	W. Cox	9	30	2	15	68	30
South Bend	21	C. F. Dillon	4	9	1	5	...	1
Teresa	63	G. Meyer	8	24	2	12	18	35
Triumph	98	C. N. Cox	7	40	3	18	142	67
Umbrina	99	C. Campbell	25	...	7	...	...	...
Vera	60	W. J. Bragg	20	...	6	...	...	...
Victoria	60	J. Haan	9	18	2	10	...	...
Zillah May	66	S. Balcom	7	24	2	12	125	39
Canoes	...	...	...	...	...	...	...	...
Totals, 41 vessels	2,708	...	495	587	149	288	2,263	2,819

Sealing Return, Season 1897.

Particulars of Catch.								
Japan Coast.		Vicinity Copper Island.		Behring Sea.		Total.	Remarks.	Number of Special Sealing License.
Males.	Females.	Males.	Females.	Males.	Females.			
308	181					489	Wrecked, 5 miles south of Akishi, Japan, 21st June, 1897	20
				512	412	1,331		10
						640		12
						20		21
373	446	6	9	136	257	1,298		8
				368	529	1,064		35
				217	362	737		27
154	154	2	4	66	246	626		14
432	430	49	139			1,064		2
						302		3
381	637	85	163			1,438		11
				182	220	1,462		34
426	439	56	127			1,052		13
				558	696	1,339		30
				396	577	1,250		15
				134	381	533		37
				299	254	553		45
				233	207	491		40
						27		24
120	269	88	249	25	53	804		9
						25		39
				195	370	944		1
						290		4
							Wrecked, catch of 11 skins lost, Queen Charlotte Isl'ds, Apl. 23, 97	29
				403	492	996		33
468	362	40	102			1,123		5
						12		25
				449	343	959		36
				404	424	1,021		32
						24		23
				292	411	822		26
		128	135	10	3	878		18
430	217			88	164	899		19
						98	Burnt at sea, lat. 48° 30′ N. long. 125° 55′ W., April 23rd, 1897	16
						1		42
				235	560	848		38
				690	861	1,760		17
433	385			48	142	1,008		6
152	124			114	150	540		22
				96	680	776		44
				399	264	827		31
						1,018	Indian catch, B. C. coast	
3,677	3,644	454	928	6,549	9,058	30,410		

A.—Schedule of Salmon Canneries operated in **British Columbia**, Season of 1897.

Owner or Agent.	Name of Cannery.	No. of Licenses.	Packed in 1-lb. Cans.	District.	Locality.
Cleave Canning Co	Cleave	20	931,200	Fraser River.	New Westminster.
Brennan Bros	Ontario	20	436,464	do ..	do
Boutilier & Co	Boutilier	13	552,000	do ..	do
Sinclair Canning Co	Mayflower	17	592,200	do ..	do
Western Fisheries Co	W. F. C	13	649,888	do ..	do
Lam Tûng	New Westminster	20	904,320	do ..	do
Welch Bros	Celtic	20	716,352	do ..	North Arm.
J. H. Todd & Son	Richmond	20	820,216	do ..	do
do	Beaver	20	1,050,624	do ..	Lulu Island.
Provincial Canning Co	Provincial	20	552,000	do ..	North Arm.
Good, Murphy & Co	Dinsmore Island	20	622,560	do ..	do
McPherson & Hickey	McPherson	20	960,000	do ..	do
A. E. Tregust	Fraser River	20	720,000	do ..	do
Alliance Canning Co	Alliance	20	600,000	do ..	do
D. J. Mann & Co	Sea Island	16	1,542,000	do ..	do
Rowan Bros	Terra Nova	20	1,047,744	do ..	do
P. Birrell	B. C	20	807,936	do ..	Annieville.
F. R. Industrial Society	Industrial	13	537,600	do ..	do
Ewen & Co	Ewen's	20	1,908,480	do ..	Lion Island.
B. C. Canning Co	Dear Island	20	1,303,152	do ..	Dear Island.
Victoria Canning Co (R. P. Rithel, Ag't.)	Delta	20	2,664,672	do ..	Ladner.
	Harlock	20			
	Holly	20			
	Wellington	20			
Anglo-B. C. Canning Co (H. Bell-Irving, Ag't.)	Wadhams	20	1,383,264	do ..	Canoe Pass.
	Canoe Pass	40	1,945,328	do ..	Ladner.
	British American	......	....	....	Canoe Pass.
	Britannia	20	1,797,792	do ..	Steverton.
	Phœnix	20	1,539,840	do ..	do
Turner, Beeton & Co.	Fisherman's	20	960,864	do ..	Port Guichon.
Crowden & Penzer	Anglo-American	20	840,000	do ..	Canoe Pass.
Brunswick Canning Co	Brunswick No. 1	20	1,267,344	do ..	Steverton.
do	do No. 2	20	1,267,200	do ..	Canoe Pass.
McDonald Bros	Watham Island	20	720,000	do ..	do
Currie & McWilliams	Currie & McWilliams	20	1,010,000	do ..	Sunnyside.
Hennessy & Alexander	Canada Pacific	20	1,417,776	do ..	Lulu Island.
Colonial Canning Co	Colonial	9	721,488	do ..	do
M. H. Bain	Pacific Coast	20	1,219,200	do ..	Steverton.
Hume & Co	Hume	20	765,792	do ..	do
London Canning Co	London	20	960,000	do ..	do
M. Costello	Star	20	1,056,000	do ..	do
Malcomb & Windsor	Gulf of Georgia	20	2,433,936	do ..	do
M. Morris	Lighthouse	20	1,104,000	do ..	do
B. C. Canning Co	Windsor	20	216,000	Skeena River	Aberdeen.
R. Cunningham	Skeena	20	384,000	do ..	Port Essington.
H. Bell-Irving, Ag't	British American	20	393,600	do ..	do
	North Pacific	20	384,000	do ..	Inverness.
Turner, Beeton & Co	Balmoral	20	321,600	do ..	Balmoral.
do	Inverness	20	423,072	do ..	Inverness.
Muir, Holland & Co	Carlisle	20	307,200	do ..	Carlisle.
Victoria Canning Co	Standard	20	220,800	do ..	Irving.
Royal Canadian Co	Claxton	20	293,600	do ..	Claxton.
Cunningham & Rhode	Lowe Inlet	6 sein's	393,600	do .	Lowe Inlet.
B. C. Canning Co	Rivers Inlet	20	220,000	Rivers Inlet.	Rivers Inlet.
do	Victoria	20	192,000	do ..	do
Brunswick Canning Co	Brunswick	20	288,000	do ..	do
Wadham & Co	Wadhams	20	312,000	do ..	do
H. Bell-Irving, Ag't	Good Hope	20	384,000	do ..	do
Victoria Cannery Co	Wannuck	20	360,000	do ..	do
Vancouver Packing Co	Vancouver	20	168,400	do ..	do
Federation Canning Co	Naas Harbour	20	960,000	Naas River.	Naas Harbour.
do	Mill Bay	20			Mill Bay.
S. A. Spencer	Alert Bay	......	423,000	do ..	Alert Bay.
R. Drainey	Namu Harbour	......	192,000	do ..	Namu Harbour.
Clayoquot Fishing Co	Clayoquot	......	239,760	do ..	Clayoquot, west coast.

C.—RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Number of Men engaged in the Fisheries, Quantity and Value of Fishing Materials, Kinds and Quantities of Fish, &c., in the Province of **British Columbia**, for the Year 1897.

Number.	DISTRICTS.	VESSELS AND BOATS EMPLOYED.						FISHING MATERIALS.					KINDS OF FISH.					Number.
		Vessels.			Boats.			Gill Nets.		Seines.		Lines.						
		Number.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Value.	Salmon, dry salted, lbs.	Salmon, brls.	Salmon, fresh, lbs.	Salmon, smoked, lbs.	Salmon, cans.	
			$			$			$		$	$						
1	Fraser River	50	193100	155	3477	139080	13481	347700	268275	....	......	1500	600000	1886	1472000	48469	42197516	1
2	Rivers Inlet	12	44480	36	650	26000	2600	105000	78750	....	......	100	.....	750	20000	1500	2116440	2
3	Skeena River	9	28000	27	520	22000	2390	120000	90000	1000	1500	150	.....	800	100000	10000	3337472	3
4	Naas River	1	2500	3	95	3800	390	19500	14625	....	......	50	....	150	10000	10000	960000	4
5	West Coast Queen Charlotte Island	....	.. ..	....	20	25000	70	2600	1950	300	450	250	.....	..	....	.. ...	....	5
6	East Coast Queen Charlotte Island	.....	.. ..	..	25	3750	110	2500	2500	250	375	750	...	125	2500	3000	....	6
7	Cape Scott to Comox	....	......	....	25	2500	65	2500	1875	500	750	250	.	100	30000	6000	423000	7
8	Comox to Victoria	60	12000	180	65	3900	135	4000	3000	4000	6000	2500	...	260	150000	5000	....	8
9	Victoria to Cape Beal	6	1800	20	25	1250	120	3000	2000	1000	1500	2000	....	200	25000	8000	....	9
10	Cape Beal to Cape Scott	3	750	12	15	750	60	2000	1500	200	300	200	..	750	5000	3000	239760	10
	Totals	141	282630	433	4917	228030	19421	608800	464475	7250	10875	7750	600000	5011	1814500	85969	49274188	

C.—RETURN showing the Number, Tonnage and Value of Vessels and Boats, &c.—Province of **British Columbia**—*Concluded.*

Number.	DISTRICTS.	KINDS OF FISH AND FISH PRODUCTS.															TOTAL VALUE.	Number.
		Sturgeon, lbs.	Halibut, lbs.	Herring, lbs.	Herring, smoked, in boxes, lbs.	Oolachans, salted, brls.	Oolachans, fresh, lbs.	Oolachans, smoked, lbs.	Trout, lbs.	Assorted or mixed fish, lbs.	Cod.	Smelt, lbs.	Skill, brls.	Hair seal skins, No.	Sea otter skins, No.	Fish oil, galls.	$ cts.	
1	Fraser River	1137696	1525000	100000	35000	250	250000	1000	30000	150000	110000	30000	....	450	..	7500	4,583,480 80	1
2	Rivers Inlet	....	20000	.	....	275	10000	....	300	1000	.	....	...	800	..	8000	228,624 00	2
3	Skeena River	....	5000	5000	..	500	50000	.....	2000	1000	.....	....	...	250	..	5000	361,684 70	3
4	Naas River	....	10000	.....	..	450	50000	20000	500	..	...	.	..	500	..	8000	111,825 00	4
5	West Coast Queen Charlotte Island	....	15000	25000	650	..	......	.....	.....	25000	10000	.. ..	....	1000	..	10000	10,665 00	5
6	East Coast Queen Charlotte Island	....	20000	20000	2500	...	...	.....	.. .	12000	2500	....	60	1000	15	25000	14,975 00	6
7	Cape Scott to Comox	....	10000	15000	....	350	..	.....	10000	10000	1000	5000	35	500	10	5500	56,275 00	7
8	Comox to Victoria	....	350000	245000	12000	50	60000	500	15000	225000	150000	35000	10	200	5	15000	74,250 00	8
9	Victoria to Cape Beal	....	2500	10000	500	...	..	.....	5000	8000	8000	....	....	50	..	1500	7,562 50	9
10	Cape Beal to Cape Scott	....	10000	10000	1000	....	...	......	1500	7000	6000	. ..	....	250	..	10000	37,163 50	10
	Totals	1137696	1967500	430000	51650	1875	420000	21500	64300	439000	287500	70000	105	5000	30	95500	5,486,505 50	
	Catch of Canadian fur-seal fleet (30,410)																304,100 00	
	Caviare																7,679 40	
	Isinglass																500 00	
	Oysters																8,000 00	
	Clams and mussels																9,080 00	
	Crabs and abelonies																18,000 00	
	Shrimps and prawns																5,000 00	
	Estimate of fish consumed in province not included in above																300,000 00	
	Grand total																6,138,864 90	

D.—RECAPITULATION

Of the Yield and Value of the Fisheries of **British Columbia,** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon, in cans	Lbs.	49,274,188	0 10	4,927,418 80
do fresh	"	1,814,500	0 10	181,450 00
do smoked	"	85,969	0 10	8,596 90
do salted	Brls.	5,011	10 00	50,110 00
do dry salted	Lbs.	600,000	0 03	18,000 00
Sturgeon, fresh	"	1,137,696	0 05	56,884 80
Halibut do	"	1,967,500	0 05	98,375 00
Herring do	"	430,000	0 03	12,900 00
do smoked	"	51,650	0 10	5,165 00
Oolachans, fresh	"	420,000	0 05	21,000 00
do smoked	"	21,500	0 10	2,150 00
do salted	Brls.	1,875	10 00	18,750 00
Trout, fresh	Lbs.	64,300	0 10	6,430 00
Fish, assorted or mixed	"	439,000	0 05	21,950 00
Codfish, fresh	"	287,500	0 05	14,375 00
Smelt, fresh	"	70,000	0 05	3,500 00
Skill, salted	Brls.	105	10 00	1.050 00
Fur-seal skins	No.	30,410	10 00	304,100 00
Hair-seal do	"	5,000	0 75	3,750 00
Sea otter do	"	30	200 00	6,000 00
Caviare	Lbs.	38,397	0 20	7,679 40
Fish oil	Galls.	95,500	0 30	28,650 00
Isinglass				500 00
Oysters	Brls.	1,600	5 00	8,000 00
Clams and mussels				9,080 00
Crabs and abelonies				18,000 00
Shrimps and prawns				5,000 00
Estimate of fish consumed in province not included in above				300,000 00
Grand total				6,138,864 90

Financial Statement of the **British Columbia** Fisheries for 1897.

		Value.
		$ cts.
3,299	salmon licenses to fishermen	32,990 00
1,185	do canners	11,850 00
19	do traders	190 00
32	do (domestic)	32 00
18	do (seines)	450 00
1	do (traps)	75 00
1	do Clayoquot Fishing Co.	150 00
58	sturgeon licenses, nets	290 00
122	do lines	122 00
4	trout licenses, nets	20 00
	Oyster rents	156 50
	Fines and forfeitures	446 75
	Total	46,772 25

E.—CAPITAL invested in Fishing Plant and Material, including the Fur-seal Fleet, Boats, &c., of **British Columbia,** for the Year 1897.

	Vessels, Boats, Canneries, Nets, &c.	Value.	Total.
		$ cts.	$ cts.
140	vessels		282,630 00
4,917	boats		228,030 00
	Scows and flat boats		8,500 00
608,800	fathoms gill-nets		464,475 00
7,250	do seines		10,875 00
	Lines, hooks, &c		7,750 00
65	salmon canneries, at $20,000		1,300,000 00
4	cold storage and freezers		35,000 00
	Oil factories		9,000 00
	Salteries		4,000 00
			2,350,260 00
41	vessels employed in fur-seal fishing	135,100 00	
149	boats do do	14,900 00	
288	canoes do do	14,400 00	
			164,400 00
	Grand total		2,514,660 00

Hands employed in connection with fisheries	19,850
Sailors and hunters in sealing fleet (whites)	495
do do (Indians)	587
Total	20,936

APPENDIX No. 10.

ONTARIO.

SYNOPSES OF FISHERY OVERSEERS' REPORTS IN THE PROVINCE OF ONTARIO FOR THE YEAR 1897.

LAKE OF THE WOODS DIVISION.

Overseer M. Kyle reports a decrease of nearly fifty per cent in the yield of the fisheries of the Lake of the Woods, due, no doubt, to the less vigorous prosecution of the industry, as only about half of the fishing plant of the previous year was in use. This sudden falling off in the output is largely attributable to the mining excitement of the neighbouring district, where the former fisherman has turned prospective miner, working claims, etc. The catch of sturgeon, the principal fish of this division, is naturally reduced, as only about a third of the number of pound-nets of 1896 were fishing. Besides the high water, constant fishing in the past and other local conditions, had a bearing on the decreased catch. The fact that the State of Minnesota issued this year no less than 250 pound-net licenses, employing 144 men, capturing over one-half million pounds of sturgeon on the south-westerly part of the lake, must also be taken into consideration. Should the water remain at its normal height next season, it would go far to prove the contentions of many interested parties as to its influence on the fluctuation of the catch. Prices of fish were better than last year, especially that of caviare, manufactured from sturgeon eggs, which is now looked upon by competent judges as fully equal to the best European article. As a proof of its spreading reputation, this officer received a communication from one of the largest wholesale fish dealers of London, Eng., seeking information respecting the Lake of the Woods caviare, which he most willingly supplied.

With regard to other varieties of fish, whitefish, the most marketable of the different species, yielded comparatively as well as last year, and fishermen often liberate the coarser kinds to keep the whitefish. Maskinonge and bulheads both show improvement, simply because there was a better demand for them. Nearly the whole catch is exported to Minneapolis, Buffalo and Boston.

The only fishway in this district is in the Keewatin Power Co.'s dam on the Winnipeg River. Mr. Kyle noticed that while the old resident fishermen seemed to make fair catches, the inexperienced new-comers would do little or nothing, from which he concludes, that a great deal depends on the where and how in this calling as well as in others. The value of the whole catch is made up at $71,000, about half of the previous year's.

LAKE SUPERIOR.

Overseer J. W. Cross, who has now charge of the upper waters of Lake Superior, reports a decline in the catch of fish, which he ascribes to the fact that fishermen sought more attractive employment in exploring the new mining region of that vicinity. The only gill-net fishing in this division is prosecuted in Thunder Bay, mostly through the ice, and this officer is of opinion that it should be reserved for that purpose and pound-nets not to be allowed therein. The United States Government places annually in that bay, about ¾ of a million trout-fry as a compensation for the privilege of collecting spawn from Canadian fishermen.

Overseer T. H. Elliott, who has charge of the lower part of Lake Superior, complains that many fishermen delay in sending the returns of their catch, while several omit this duty entirely. About 40,000 lbs. of whitefish and salmon-trout were caught less than last year. This is due to the poor fishing in October, as the fish did not come on the shoals as early last season as previously.

The whole catch of Lake Superior is computed at $207,000, about the same as last year's.

LAKE HURON.

North Channel of Lake Huron, including Manitoulin Island.

Overseer Elliott, who has charge of this district, reports a decrease in whitefish of over half a million pounds; especially felt in the vicinity of Killarney and Squaw Island. This seems to corroborate the opinion of the manager of the Georgian Bay Fish Co., that those waters were nearly depleted of these valuable fish. This scarcity of whitefish is attributed to over-fishing, towing of logs and seining.

A shortage of 50,000 lbs. of pickerel is ascribed to the large number of small trap nets seized and destroyed on the north shore of the Georgian Bay. Sturgeon shows an improvement. So does salmon-trout, to the extent of 368,000 lbs. This is owing to extra tugs and boats fishing along Cockburn and Manitoulin Islands. Nearly the whole catch is shipped to Buffalo, Detroit and Chicago. This officer remarks as follows:—

"The principal abuses which now exist are trap-netting and seining. The former is on the decrease as those nets are stationery and are more easily detected. The cruiser 'Dolphin' did valuable work on the Georgian Bay last season. My men and myself worked in connection with Captain Pearson, and we suceeded in destroying so many nets in the vicinity of Bad River that those who were engaged in this illegal fishing left for their homes in Wiarton, Goderich and Southampton. In fact, I was informed that the Buffalo Fish Company, would not supply those men with any more twine to make trap-nets as they lost them as soon as they were set and could not catch enough fish to pay for them.

"Seining was carried on last season in the vicinity of Killarney and Wikwemikong and as far east as the French River. In order to keep down expense I did not use the Government sail-boat steadily, the first of the season as I thought the 'Dolphin' could stop the seining in those places, but on account of being short of men she could not do so. On July 18th, on receipt of a message from Little Current, stating that seining was being carried on there, as well as trap-netting by men from Killarney; we left Sault Ste. Marie in the 'Dolphin' and proceeded there seized two large seines and destroyed two trap-nets 'traps.' We then went to Bad River and destroyed four other 'trap-nets.' We found that those Killarney men had been seining as far west as Spanish River. Captain Pearson and myself thought it advisable to employ the sail-boat during the balance of the season. This was done with good results.

"'The Act respecting the protection of navigable waters has been strictly observed by mill-owners in this district. There are no fishways in this division, but two should be built, one on St. Joseph's Island and one on the Manitoulin Island. Mills have been built on those two fine trout streams, thus preventing the fish from running up. The close seasons were strictly enforced, as the United States side had a close season for whitefish and trout last year, our fishermen were perfectly satisfied as it was their contention, that living close to the border the fishermen across the line could fish, while they could not.

"I must again draw your attention to the small mesh used in pound-nets in this division, it is greatly to be regretted to see tons of small fish classed as seconds, destroyed each season. Some means should also be taken for the protection of young sturgeon, as they are also being ruined in a similar manner. All fishing boats and tugs should be numbered, which could be done in connection with the cruiser, and without any extra expense to the department. Having reference to the better protection of the fisheries in this division and Georgian Bay, I would respectfully recommend that Capt. Pearson should have two more men. Those men should be trustworthy, and be able to take a small boat and go to any locality where seining or trap-netting is suspected, and remain there three or four days if necessary, while the 'Dolphin' would be patrolling other grounds. This is the only way effectual work can be done, as poachers can watch a steamer, but they cannot tell when a small boat will come on them. There are still over twenty seines in the vicinity of Killarny, and just as soon as the ice moves those men leave and go down the north shore in the vicinity of the Fox Islands to seine. Some of them left last season before the ice broke up, and I was reliably informed that tons of whitefish were caught in this manner last spring. In order to stop this it will be necessary to either have a couple of extra men on the cruiser or employ the Government sail-boat here as usual."

GEORGIAN BAY.

Overseer F. J. Smith states that fishing, although fairly good, was not prosecuted as vigorously as in former years. The fish companies have ceased to supply nets indiscriminately to all applicants. Pickerel fishing through the ice is fast supplanting net fishing. The little shanties are sometimes so thick on the ice, assuming almost the appearance of a village. As much as twelve cents per pound being paid by dealers for choice pickerel, it becomes quite an inducement for idle men or boys to invest fifteen cents in hooks and try their luck. Herring were late coming inside, even after the ice formed, consequently their capture is small. During the season, this officer seized and destroyed twenty-one trap and hoop-nets, thirty-five gill-nets, two seines and two boats.

Overseer Robert Edmonstone says that forty-seven fishing boats and eight tugs formed the fishing fleet of his district. Some of the latter went in other divisions for a part of the time, taking an additional license therefor. Captain Pearson rendered him valuable assistance in effecting a few seizures of illegal nets. He is against allowing fishing for herring in November. However, last year the weather was rough during November and very little illegal fishing was done.

Overseer Isaac Lennox says that the increase of the best grade of fish noticed in his division is ascribed to fuller returns from fishermen, rather than to the abundance of fish. The falling off in coarse fish is due to checking the use of trap-nets. To prevent the destruction of young and immature whitefish and salmon-trout, this officer would recommend that no such fish under two pounds, dressed, should be taken, under a heavy penalty. He also suggests that a certain spawning ground for trout should be set apart against all molestation. There are thirteen mills in his district, but he has nothing to say against their owners.

LAKE HURON—*Continued.*

From Cape Hurd to Point Edward.

Overseer Chas. Briggs reports salmon-trout as more plentiful than last year. This, some fishermen ascribe to calm weather, but it is more likely due to a better observance of the close season for the past few years. There was quite a falling off in the yield of herring, attributed to the warm weather during September and October, which kept the fish out in deep water. The bark grounded from logs being towed across the lake is still considered a nuisance to fish and a damage to nets. Thousands and thousands of logs drifted ashore this summer from broken rafts. About eighty per cent of the catch is sold in United States or Canada, and the balance used for home consumption. The close seasons were fairly well observed. There were, however, five cases of seizures for illegal fishing. Settlers often request the privilege of fishing for coarse fish in the spring for their own use, and Mr. Briggs believes that such permits at one dollar each would be beneficial to all, as the more coarse fish captured by them the better for the fry and ova of the finer species.

Overseer H. W. Ball reports a shortage in the catch of his division, owing to a less vigorous prosecution of the industry. About ninety per cent of the whitefish and trout is exported to Buffalo as well as about forty per cent of all other kinds, the balance being used for home consumption. The mill-owners now burn the saw-dust from their mills instead of dumping it into the streams. There are no complaints for the want of fish-passes on the mill-dams. The fishermen of Goderich think it a hardship not to be allowed to fish on both sides of said port. During the fall, perch visited the harbour in immense numbers, to the delight of anglers. From his observations, he concludes that while whitefish are declining on that part of the coast, salmon-trout and herring seem to keep up their supply. Sturgeon, pike and other coarse fish, excepting perch, are getting less abundant. He recommends that when the Fisheries Act, or regulations mention young fish, it should specify length or weight.

Overseer H. B. Quarry believes the returns furnished by fishermen to be undervalued. The result of the season's fishing is an average one. The fishermen suffered less damages from the autumn gales than usual. The fishery regulations were well respected by the resident fishermen, the only infractions reported were by outsiders.

Overseer J. C. Pollock states that fishermen were generally satisfied of the season's operations, the catch being even larger than the previous one. A noticeable fact, which this officer cannot explain, was the improved catch effected on the western side of St. Clair River, over that of the Canadian side. Some are of opinion that the large steamers passing nearer our shores in deeper water have a tendency to frighten the fish. About eighty per cent of the fish is disposed of across the border.

The total value of the catch in the whole Lake Huron, including North Channel and Georgian Bay, amounts to $465,000. A decrease of about thirty-three per cent from the product of 1896.

LAKE AND RIVER ST. CLAIR.

Overseer Jos. Boismier, reports a shortage in whitefish of about 5,000 lbs. as compared with the previous catch. The best capture of these fish was late in the season around Péche Island, which goes to show that they were there in clear deep water in strong current for the purpose of spawning. Sturgeon also show a falling off. As these fish now bring the highest price in the market, some being paid as much as $9 a piece, there should be some regulation limiting a certain length, under which they should be liberated. As it is now hundreds of young immature sturgeon are caught in pound-nets, and sacrificed at low rates. Bass are becoming very scarce and should not be allowed to be netted for a few years.

Overseer C. W. Raymond, says that owing to the rough season the fishery operations were not so successful as last year. For the better protection of bass, he recommends that Mitchell's Bay, which is quite a spawning resort for that fish, be set apart against netting and for the natural propagation of that game fish.

THAMES RIVER.

Overseer P. McCann, remarks that bass ascended the Thames River in large numbers, as well as pickerel and other course fish. Rod fishing was indulged in to a greater extent than ever before and good catches were effected. Anglers urge the adoption of regulations to prevent the killing of young bass. Carp is alarmingly increasing and if they are as voracious and dangerous to other species as reported, some steps will soon have to be taken for their extermination, possibly a small bonus might be offered for that purpose. The thirteen fishways of this district are in excellent condition with the exception of the one at Dorchester where the dam was carried away by spring freshets.

Overseer T. McQueen, remarks that he has endeavoured to impress upon the fishermen the propriety of honestly giving true statements of their catch of fish, explaining that the sole object the department had in view in publishing them was to bring so valuable a branch of industry to public notice. There are twenty fishery stations between Louisville and the mouth of the River Thames, and most of the catch is exported to United States markets excepting the local consumption. A certain amount of good feeling now prevails amongst fishermen of that district, who now seem to realize the importance of the protective measures adopted by the department on their behalf. Subsection 2 of section 15 has been well observed, and no rubbish from mills or any deleterious substances of any kind were allowed to be thrown into the Thames River. The only annoyance to fishermen was the throwing in of orchard trimmings.

LAKE ERIE DIVISION.

Overseer John G. Stewart, reports the fishing operations in the vicinity of Pelee Island as very unsatisfactory, and many pound-net fishermen are so discouraged at not having paid expenses, that they will seek other employment. This statement is all the more surprising as the neighbouring overseers on the main shore of Lake Erie all report an improved catch and successful season. There were three pound-nets less than last year. Some were in hopes of making up their loss by the fall fishing, but unfortunately it proved otherwise, and to make matters worse, many nets were ruined by the heavy gales of the last days' fishing. The success of anglers for bass was very light. Carp, an inferior fish, are becoming very numerous in the shallow waters of our shores. As they are fierce and voracious, they no doubt drive away the higher grades of fish, this might account for the light catch in the shoal waters. The close seasons were well observed by our own fishermen, and Captain Dunn, of the cruiser "Petrel" kept a close watch for foreigners, but no seizures were made.

Overseer P. Lamarche, the nearest officer to Pelee Island, reports much brighter propects than the above overseer, and returns considerable increase over the previous catch at an advanced price. The fishing operations opened later than usual, but the catch was good from the beginning, in fact better than later on. During November heavy catches of herring were reported. The fishery station nearest to the mouth of Detroit River was a failure. Years ago this station was remunerative, but last season its owners did not realize $100 worth of fish. Mr. Lamarche attributes this decline to the throwing of sewage and other refuse from manufacturing establishments from Detroit and other cities into the river. He has been informed that to escape detection some of these factories pump their refuse at night.

Overseer J. K. Laird, states that fishing began in earnest about 1st May, and the run of fish without being at any time heavy, was steady, remaining so most of the season. The fall run was also good, the heavy gales only coming on towards the end of October, when several nets were damaged. Those who attempted to get the run of whitefish in December lost a great deal of their gear. All going to prove that it would be in the fishermen's own interest to stop all fishing on 1st November, as they are not compensated for the risk they run. Herring taken in the middle of November were nearly ripe and ready to spawn. Fishermen could not refuse to admit that it would be in their own interest not to capture fish in that condition. There are serious complaints that German carp are injuring bass and other game fish especially in Rondeau Bay. Generally the fishermen are satisfied of this year's operations; the fish were of good quality as well as fairly plentiful. The protection of the Government cruiser against foreign poachers is also a pleasing feature to our fishermen.

Overseer Wm. Freeland, also reports an improvement over the catch of fish of 1896. Although fishing did not begin till May, the run was good from the first and even improved during June and July. Towards the end of the season, fish again returned to the shores and good catches made. Herring were plentiful, and of large size. Sturgeon were not abundant, but there was one large run of them, when some fishermen captured as many as sixty in a single haul. He found that the close seasons were well observed.

Overseer D. Sharp, states that the last fishing season was one of the best for the past fifteen years, in proportion to the number of nets in actual use. Although there were six pound-nets less than during the previous summer, the catch of whitefish was exceeded by nearly 60,000 lbs. Seining in Inner Bay was poor, but gill-net fishing, about an average. The fishery regulations are well observed, with the exception of angling for bass during its close time. While pretending to angle for perch, these parties take all the bass they can hook. Angling should be restricted during close season in Inner and Outer Bays of Long Point.

Overseer W. P. Croome, of Grand River division, reports the fishing season as an average one. The whole catch is used in the locality. The existence of a Rod and Gun Club in the neighbourhood has a beneficial effect and tends to the better observance of the prohibited seasons. No saw-dust or rubbish is now permitted to escape in the streams. The nine fishways under his charge are all in fair condition. He is of opinion that allowing fishing for coarse fish during close season of game fish is a prolific means of evading the regulations.

The total value of the whole Lake Erie fisheries is given at $245,000, being a few thousand dollars in excess of the previous yield.

LAKE ONTARIO.

Overseer F. Kerr reports an unusual increase in the catch of whitefish in that part of Lake Ontario under his charge. At Grimsby and Winona, the yield of 1896 was more than doubled. At the latter place twenty tons of trout was the catch of the four boats stationed there. Good fishing could be had there all summer until the middle of September. Something should be done to prevent the destruction of immature whitefish and trout in the small meshed gill-nets now used for herring. He recommends that no such herring nets be allowed during June, July and August, as herring is not much in demand during the hot weather, and a beneficial protection would thus be afforded to the higher grades of fish. Prices of whitefish and trout were good, and it would seem a pity if efforts were not made to protect such valuable species and keep their supply at least at the present state. This officer believes it can be done simply by prohibiting the destruction of immature fish. Herring was also abundant, never before has Mr. Kerr seen such hauls at the various fishing stations, as many as 14,000 herring were captured at one time, and often after filling their boats, fishermen were compelled to cut their nets. Of course such abundance soon glutted the markets and reduced the prices. Attempts to place smoked herring in Montreal and Quebec markets did not prove remunerative. Some of the fishermen have decided to use a larger mesh enabling them to place a higher prized article. They now understand that these enormous captures of small herring will not pay as well as smaller quantities of the large fish. The siscoe-herring is fast disappearing, hardly any are now caught, and it is a regretable fact that such a palatable food fish should thus become extinct from our lakes.

About the same amount of sturgeon as usual was captured at Niagara and Fort Erie. Some caught were of small size. Regulations should be adopted fixing a limit size to protect the immature fish. Sturgeon has now become one of the most valuable of the fresh water species, and should be protected, either during its spawning time or by the prohibition of a certain length limit. Pickerel were plentiful in the lower part of Niagara River, and large quantities were caught by anglers, especially at Queenstown, while the same fish did not seem to frequent the upper part part of the river. There was little difference in the general run of the coarse fish.

This officer distributed nearly one hundred licenses to Canadian fishermen, besides forty angling permits to foreign sportsmen. The latter were mostly in Niagara River. This year he received valuable assistance from the fishery officer on the United States side, who confiscated many illegal implements. This proved a real benefit, as formerly most of the trouble came from that side of the boundary.

A gang of poachers slaughtering sturgeon with spears in the lower Niagara were prosecuted and fined. A few other cases of illegal fishing also came under his notice, and the delinquents were also fined and their illegal implements confiscated.

While fishing for whitefish and trout, some fishermen reported the capture of what they called a new species, that is a kind of fish unknown there until two years ago. Mr. Kerr thinks it is a cross between a whitefish and a herring. It has some characteristics of both in shape and form, their scales appearing somewhat darker. Their weight varies from two to four pounds. They are a most palatable food. He will endeavour to secure a good specimen next season and forward it to the Commissioner of Fisheries of Canada for proper classification.

Overseer Wm. Sargant, reports a considerable increase in herring, but inferior prices were obtained owing to the large quantities on the market. Trout also improved, and he recommends that the regulation size of mesh be five and a half inches. Whitefish equals last year's catch, but bass is becoming scarce in Twelve and Sixteen-Mile Creek, being driven out by German carp, which is rapidly increasing in these streams. The close seasons have been well respected although a few illegal nets were seized and destroyed.

Overseer S. Freeman, says that the prohibition of seine fishing resulted in the increase of trout and whitefish. Bullheads, bass, perch, pike, &c., show a falling off, which he attributes to the canal between Presqu Ile Bay and Bay of Quinté. Since its completion fishing has been less successful every year. On the whole, this year's catch greatly exceeds that of last year. The close seasons here have been well observed. Five cases of illegal fishing came to his knowledge and the offenders were all fined. Mill-owners complied with the regulations regarding saw-dust. There are ten fishways, all in good repair, in his district.

Overseer J. Redmond reports that despite the reduced number of fishermen, the catch of whitefish and trout has increased, owing to the large quantities of fry deposited from the hatcheries. Coarse fish were as plentiful as in previous years. He seized a considerable number of gill-nets and four hoop-nets, and made six convictions for illegal fishing.

Overseer W. P. Clarke, notwithstanding the heavy winds which prevented fishing from being carried on to its usual extent, reports a slight increase over last year. Angling for bass was the best noticed for years. About four-fifths of the catch is exported to the United States, and the balance used for home consumption. The regulations applying to mill-owners have been well observed. The close seasons have been violated in three cases and the illegal nets seized.

The only fish ways in his district are in Government dams, and as the fish do not ascend Trent River, on account of the falls, he did not deem it necessary to examine them. He is unable to give the condition of the fisheries in Trent River, owing to the little time during which he has been in charge, but information from the fishermen reports the catch to exceed that of past years.

Overseer Philip Vanness asserts that the fish in his division appear to increase, although anglers report a diminution in bass, maskinonge and pike. He considers hook and line fishing to be overdone, as about one hundred boats are engaged for three months in the year. About three-fourths of the catch is exported to the United States. No violations have been committed. There are no mills and fishways in his district.

Overseer E. H. Sills states that a slight increase is noticeable, due to a more vigorous prosecution and better observance of the regulations. The liberation of fry was also beneficial to the fisheries. A few parties guilty of infringement were fined and their boats and gear confiscated. There are no fishways in his district. Regulations respecting saw-dust and mill rubbish were well complied with by mill-owners. He again urges the marking of all licensed fishing implements.

FRONTENAC, LEEDS AND LANARK DIVISIONS.

Overseer John Purdy reports a falling off in the yield of fish in his district as compared with last year's. This, however, is not ascribed to the scarcity of fish, but to the low state of the water, which prevented many from setting their hoop-nets at the proper places. The number of fishermen was also less than formerly. Nearly the whole catch is shipped to United States. This officer is of opinion that the use of hoop-nets should be encouraged, as the more coarse fish taken the better for the higher grades of fish.

Overseer George Lake returns a shortage in the yield of fish in his division, owing to a smaller number of persons fishing. Ten cases of illegal fishing came to his notice, they were all fined five dollars and costs. Mill-owners all complied with the law. Several foreign anglers secured good captures of bass and pickerel.

Overseer H. R. Purcell says there are no signs of depletion of fish in the lakes under his charge, herring especially is still plentiful. Several parties were fined for illegal netting. The mill-owners allow no rubbish to escape their mills now.

Overseer A. J. Flood says that the principal kinds of fish in the Beverly Lakes are bass, pike, perch, eels and coarse fish. The neighbouring lakes contain nearly the same kinds. Some, as Wiltse and Bass Lakes, also possess a few salmon-trout and whitefish. The quantity of fish taken in the above lakes was larger than that of the previous year. Several parties were fined for fishing during the close season, and three nets were confiscated by this officer.

Overseer Mathew Riddle reports this season's catch to exceed the previous one, the cause being the increased number of fishermen. Not much illegal fishing was carried on. Spearing is done in the early spring at the mouth of Carp River, where suckers are plentiful. All fish are used for home consumption. There are no fishways, although he recommended one at Galetta on the Mississippi.

PARRY SOUND AND MUSKOKA.

Overseer G. R. Steele, on visiting his district, is of opinion that the regulations relative to saw-dust and mill rubbish have been well observed. He has no case of violation to the close seasons to report. Being informed that illegal fishing was carried on during prohibited times, he made several inquiries, which he repeated on his visit this fall, but the alleged statement could not be corroborated. There are no fishways in his division, owing to the continuous driving of saw-logs. He recommends the fixing of new notices governing saw-dust and mill rubbish, as several new mills are being constructed.

Overseer E. Forsyth attributes the decrease of 3,000 lbs. of fish to a less vigorous prosecution of the industry, as the people are otherwise more fully occupied. He reports that fish are very plentiful. Regulations were well observed. There are no fishways in his district.

PETERBOROUGH DIVISION.

Overseer G. W. Fitzgerald reports the catch of bass and maskinonge as better than the previous one. There are so many pleasure resorts in this district that it is difficult to form a definite idea of the actual catch, but upon inquiries, he is confident that more fish were caught than in previous seasons. Eight violations of the Fisheries Act came under his notice; all were duly fined. He is of opinion that the guardians under him performed efficient services. The mill-owners have well complied with the saw-dust regulations.

SIMCOE DIVISION.

Overseer Wm. McDermott says that generally the fishery laws were well observed, only one fine being imposed during the whole season. This was for catching speckled trout in prohibited time. There are no further complaints against mill owners, respecting their saw-dust. With the exception of the North-West branch of the Holland River, where some illegal fishing was carried on, and where he still has hopes of bringing the transgressors to justice. Netting and spearing are now things of the past. Fish seem to be as plentiful as ever, and there is certainly an increase in the coarse kinds.

SCUGOG DIVISION.

Overseer A. Bradshaw reports a large falling off in the yield of bass and maskinonge in the Scugog waters. The shortage is attributed by experienced fishermen, to the fact that these fish, instead of frequenting the open water, remained in the shallow feeding grounds, where the weeds prevented trolling for them. The new fishway built at Lindsay last winter, works well, and now enables the fish to ascend to Lake Scugog. The fishery laws were well observed, a single case of prosecution came before him for illegal possession of fish. No trouble was experienced from mill-owners who showed a praiseworthy disposition to fulfil the requirements of the law.

Overseer John Bowerman says it is most difficult to arrive at an accurate estimate of the quantity of fish taken from his side of Lake Scugog. Besides the numerous sportsmen camping there during the summer months, nearly all farmers bordering on the lake fish for their own use, as well as a great many townspeople. While maskinonge seem to hold its own, bass is decreasing, owing, no doubt, to the large quantities caught through the ice in March, when it is full of spawn. He thinks that the close season for bass should begin from 1st January to 1st June, as they are all through spawning by that time in the shallow waters of Lake Scugog.

WELLINGTON COUNTY AND VICINITY.

Overseer D. Coleman, who has charge of that part of Credit and Nottawassaga Rivers running through the townships of Caledon and Mono, says that these waters are stocked exclusively with speckled trout. Fry from private hatcheries greatly help to keep up the supply in these beautiful resorts. There are times in which he feels unable to cope with all poachers in so many different small streams and ponds, especially in the Caledon Lakes, and he would like an assistant during a few weeks.

ONT

RETURN of the Number of Fishermen, Tonnage and Value of Tugs, Vessels and Boats, caught in the Province of

Number.	DISTRICTS.	FISHING MATERIALS.											
		Tugs or Vessels.				Boats.			Gill Nets.			Pound Nets.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Lake of the Woods.			$			$				$		$
1	Rainy River District	* 10	304	13300	27	34	2650	90	65	14000	1200	60	9000
	Lake Superior.												
1	Lakes in Thunder Bay District	...	...	...		13	2600	26	40	10200	1530	...	...
2	Port Arthur	2	58	3400	10	12	2400	24	100	30000	4500	23	3450
3	Nepigon and Rossport	2	32	2000	10	10	2000	20	90	27400	4810	6	900
4	Jackfish	...	...	...	...	2	400	4	13	3500	700	...	...
5	Port Caldwell	2	37	3000	10	2	400	4	20	6000	1400	4	600
6	Spruce Harbour and Dog Lake	1	25	3000	5	3	600	6	48	12000	1000	2	300
7	Caribou Island	...	...	...	...	7	1400	14	84	21000	1400	...	...
8	Michipicoten Island	...	...	...	...	4	800	8	48	12000	2000	...	...
9	Otter Head	...	...	...	...	2	300	4	24	6000	700	...	...
10	Ganley Harbour	...	...	...	...	2	200	4	24	6000	500	...	...
11	Dog River	...	...	...	...	4	500	8	48	12000	2000	...	...
12	Michipicoten River	...	...	...		1	200	2	...	...	...	5	1000
13	Indian Harbour and Gargantua	...	...	...	...	3	450	6	36	9000	1200	...	...
14	Lizard Islands	2	100	7000	15	5	1000	10	200	50000	6000	5	2000
15	Point Mamaise	...	...	...	...	2	400	4	24	6000	700	...	...
16	Batchewana Bay	...	...	...	...	7	500	14	24	6000	600	5	1000
17	Goulais Bay	...	...	...	...	4	500	10	24	6000	600	...	...
18	Gros Cap and Sault Ste. Marie	1	120	8000	15	10	950	20	60	15000	1500	...	...
	Totals	10	372	26400	65	93	15600	188	907	238100	31140	50	9250
	Values $	...	...	...	...	...	...	...	...	...	...	...	...

*NOTE.—4 of these are barges of 120 tons=$2,300.

ARIO.

the Quantity and Value of all Fishing Materials, also he Kinds and Quantities of Fish **Ontario,** for the Year 1897.

Hoop Nets.		Kinds of Fish.												Value.	Number.
Number.	Value.	Herring, fresh, lbs.	Whitefish, salted, brls	Whitefish, lbs.	Trout, lbs.	Trout, salted, brls.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs	Mixed and coarse fish, lbs.	Sturgeon, lbs.	Caviare, lbs.	Bladders, lbs.		
	$													$ cts.	
15	500	......	....	437820	26830	....	133650	33760	4020	127130	214154	31050	608	71,175 94	1
....	......	......	...	27000	9000	. .	13000	....	.. .	......	......	... ..	....	3,710 00	1
....	.. .	32800	100	212100	247400	150	51548	1410	......	......	21145	... ..	....	48,766 50	2
.. .	.....	900	....	86760	177460	185	3500	.	....	.....	1100	.....	....	26,795 80	3
....	. ....	....	...	12000	20000	50	. ..	......	......	......	......	.....	....	3,460 00	4
....	......	......	36	12000	102530	705	1760	....	......	...	6900	.....	....	19,125 00	5
....	......	......	....	22075	64200	50	25000	.....	......	....	......	.....	....	9,936 00	6
....	......	......	....	4000	175275	.....	....	.....	......	.....	.....	.. ...	....	17,847 50	7
....	......	......	....	......	159965	....	.....	......	......	......	. .	.	....	15,996 50	8
....	...	......	....	3400	36925	......	.. ...	......	......	....	......	......	....	3,964 50	9
....	......	......	....	9840	8960	.....	.. ..	......	......	......	......	......	....	1,683 20	10
....	......	....	....	11820	28050	....	......	......	......	......	......	...	...	3,750 60	11
....	......	.. ..	....	68540	4900	....	. ...	... ..	...	......	......	......	....	5,973 20	12
...	. . .	......	....	7715	21700	......	... .	....	......	....	.... .	. ..	....	2,787 20	13
...	......	....	....	100900	195000	......	......	......	......	......	. .	......	....	27,572 00	14
....	......	.. ..	....	12017	28615	..	......	......	......	.....	.....	......	....	3,822 86	15
....	......	......	....	35945	4125	......	3400	... ..	......	......	3800	......	..	3,686 10	16
....	.....	......	....	30863	18420	.. .	......	.....	......	......	......	......	....	4,311 04	17
....	.....	....	....	28900	22400	. .	70	.. .	......	......	......	... ..	....	4,555 50	18
....	.....	33700	136	685875	1324925	1140	98278	1410	......	......	32945	... ..	....	....	
....	......	674	1360	54870	132492	11400	4914	56	......	.....	1977	. ....	....	207,743 50	

RETURN of the Number and Value of Tugs and Boats, and the Quantity

Number.	DISTRICTS.	FISHING MATERIALS.									
		Tugs or Vessels.				Boats.			Gill Nets.		
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.
	LAKE HURON DIVISION.			$			$				$
	North Channel, Manitoulin and other Islands.										
1	Marksville	...	...	...	...	1	125	2	50	2000	150
2	Thessalon	...	...	...	...	14	2600	28	125	25000	3000
3	Cockburn Island	2	58	6000	12	2	300	4	100	14000	3100
4	Grant Islands	...	...	...	...	4	800	8	185	12000	1300
5	French Islands	...	...	...	...	2	150	3	...	...	...
6	Algoma Mills	1	15	3000	7	2	225	3	250	8000	3200
7	John's Island	...	...	...	...	2	250	4	...	...	...
8	New Port	1	15	1500	6	1	200	2	350	11000	1200
9	Aird Island	1	16	1500	5	1	200	2	75	3000	400
10	Spanish River	...	...	...	...	3	300	6	25	1000	100
11	Cape Roberts	1	15	1500	6	2	300	4	60	3000	500
12	Gore Bay	...	...	...	...	1	200	4	...	...	...
13	Kagawong	1	10	1000	4	2	300	4	75	12000	1500
14	Little Current	1	15	1000	5	3	400	6	325	13000	2000
15	Sheguindah	1	8	1000	5	...	...	...	75	6000	500
16	Killarney	...	...	...	...	26	1500	52	1500	78000	5000
17	Wikwemikong	...	...	...	...	25	1250	50	600	25000	2000
18	Squaw Island	2	55	5500	12	13	2000	26	425	51000	8000
19	Beaverstone	...	...	...	...	1	150	2	75	3000	250
20	Bad River	...	...	...	...	1	150	2	15	500	100
21	Bustard Islands	...	...	...	...	6	1200	12	250	18000	2000
22	French River	...	...	...	...	6	1000	12	75	15000	1500
23	Dead Island	...	...	...	...	8	200	16	15	3000	200
	Totals	11	207	22000	62	126	13800	252	4650	303500	36000
	Values $	...	...	...	...	...	...	...	...	...	...

and Value of Fish, &c., in the **Province of Ontario**—*Continued.*

Pound-Nets.		Kinds of Fish.										Value.		
Number.	Value.	Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Sturgeon, lbs.	Perch, lbs.	Catfish, lbs.			Number.
	$											$	cts.	
.....	.....	1050	2370	1800	.....	200	2000	100	.....	.....	.....	486	60	1
8	2400	.....	56680	72330	.....	25260	2680	.....	26820	.....	.....	14,746	80	2
2	400	.....	16800	55475	.....	.....	.....	.....	.....	.....	.....	6,891	50	3
.....	.....	4200	16000	25144	400	.....	.....	.....	.....	.....	.....	3,910	40	4
5	1000	.....	16400	2000	.....	6000	.....	.....	4000	.....	.....	2,052	00	5
5	1500	.....	11000	103000	.....	.....	1000	.....	16000	.....	.....	12,180	00	6
5	2000	.....	7375	8256	.....	56895	800	.....	11000	.....	.....	4,952	35	7
.....	.....	800	5000	16600	.....	.....	.....	.....	.....	.....	.....	2,076	00	8
5	1500	1000	14240	20420	100	40120	1800	.....	14000	100	2000	670	20	9
.....	.....	.....	1000	12000	.....	.....	1200	.....	1000	100	.....	1,391	00	10
5	1500	.....	17420	9620	...	23230	...	.....	4260	...	.....	3,772	70	11
2	600	...	3920	1340	....	9875	.....	.....	960	.....	.....	998	95	12
.....	.....	.....	24100	23105	.....	...	.....	.....	...	.....	.....	4,238	50	13
.....	.....	4700	24866	28092	.....	...	.....	.....	16000	..	.....	5,852	48	14
.....	.....	.....	24000	22000	.....	.....	.....	.....	.....	.....	.....	4,120	00	15
.....	.....	5000	88000	112000	.....	50000	45000	100	2120	.....	.....	22,773	20	16
.....	.....	.....	23000	30000	.....	.....	2650	....	50	.....	.....	4,949	00	17
.....	.....	1000	138000	142500	.....	150	.....	.....	.....	.....	.....	25,317	50	18
.....	..	.....	4000	2000	.....	.....	.....	.....	.....	.....	.....	520	00	19
.....	.....	1400	300	.....	.....	20000	400	.....	.....	.....	.....	1,068	00	20
....	.....	23000	33000	2000	840	3500	69000	.....	9000	...	1400	6,870	00	21
.....	.....	20000	30000	.....	.....	4000	.....	.....	.....	.....	....	3,000	00	22
.....	.....	40000	10000	.....	.....	20000	.....	.....	.....	.....	....	2,600	00	23
37	10900	102150	567471	689682	1340	259230	126530	200	105210	200	3400	....		
.....	.....	2043	45398	68968	107	12962	5061	12	6312	6	68	140,937	38	

RETURN of the Number and Value of Vessels and Boats, and the Quantity

Number.	DISTRICTS.	FISHING MATERIALS.											
		Tugs or Vessels.				Boats.			Gill Nets.			Hoop Nets.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Georgian Bay Division.			$			$				$		$
1	Byng Inlet	1	8	1000	5	5	500	10	150	31600	5000	....	....
2	Pointe au Baril	2	18	2700	11	8	800	18	280	56000	9000	....	....
3	Mink Island and Shawanaga	1	10	450	3	6	800	14	200	20000	4500	....	....
4	Umbrella Islands and Copperhead	..	....	...	..	8	800	20	160	33000	5400	....	....
5	Midland and Penetanguishene	..	..	....	..	17	1800	40	340	60000	9000	14	300
6	Victoria Harbour	1	15	3000	2	15	1500	45	200	20000	3800	....	....
7	Waubaushene	1	7	1000	2	15	1000	43	240	24000	4000	16	350
8	Van Vlack	..	....	....	.	5	275	10	....	7050	750	....	....
9	Collingwood	4	126	13500	24	7	750	14	....	62800	6280	....	....
10	Thornbury	..	....	......	..	2	150	4	....	2400	240	....	....
11	Meaford	3	50	7200	15	7	500	14	....	52000	5200	....	....
12	Point William's	..	..	......	..	8	330	16	....	22000	2200	....	...
13	Owen Sound	1	14	2000	6	8	375	16	....	9750	975	....	....
14	Presqu'Isle to Griffith Island	..	....	.. ..	..	4	140	8	....	2700	270	....	....
15	Colpoy's Bay to Cabot Head	5	110	20000	30	51	3500	120	1000	125000	8900	....	....
	Totals	19	358	50850	98	166	13120	392	2570	528300	65515	30	650
	Values $	..	...	......	..	...	...	....	...	......	....	...	..

and Value of Fish, &c., in the **Province of Ontario,** 1897—*Continued.*

KINDS OF FISH.													VALUE.	Number.
Whitefish, salted, brls.	Trout, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Sturgeon, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.		
													$ cts.	
....	....	....	....	13000	16000	....	....	....	....	....	....	....	2,640 00	1
....	....	....	....	50000	80000	800	20000	20000	2000	....	....	15000	14,284 00	2
....	....	....	1000	40000	70000	....	5000	....	....	....	....	....	10,470 00	3
....	....	....	....	65000	34000	....	5400	....	....	....	....	....	8,870 00	4
110	170	650	....	33000	37000	400	60000	8000	850	2000	10000	4000	15,483 00	5
10	20	20	...	45000	15000	1100	160000	20000	1500	5000	10000	7000	14,948 00	6
15	15	30	....	10700	18000	350	130500	21000	500	8000	40000	18000	11,899 00	7
....	3	....	12800	2700	50	....	1000	....	12600	...	....	....	1,313 00	8
....	....	....	11500	18445	77080	...	500	....	5000	..	....	....	9,738 60	9
...	8	....	....	150	4000	...	....	....	....	....	....	....	492 00	10
....	....	....	....	500	153000	...	....	....	....	....	....	....	15,340 00	11
....	....	....	1000	....	56500	....	....	....	....	....	....	....	5,670 00	12
....	....	....	3800	500	33000	....	....	....	....	....	....	....	3,416 00	13
....	27	....	1350	....	10460	....	....	....	....	....	....	....	1,343 00	14
20	25	58	25000	33000	444000	700	....	....	....	....	....	....	48,278 00	15
155	268	758	56450	311995	1048090	3350	382400	69000	22450	15000	60000	44000	....	
1550	2680	3032	1129	54959	104809	268	19120	2760	1347	450	1200	880	164,184 60	

Return of the Number and Value Vessels and Boats, and the Quantity and Value of Fish, &c., in the **Province of Ontario,** 1897.—*Continued.*

		Fishing Materials.																			
	Districts.	Tugs or Vessels.				Boats.			Gill Nets.			Seines.			Pound Nets.		Hoop Nets.		
Number.		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.	Value.	Number.
	Lake Huron (Proper)—*Continued.*			$			$				$			$		$		$	
1	Cape Hurd to Southampton	5	85	14700	33	34	3400	80	1100	110980	14800	11	550	800	...	...	...	...	1
2	Saugeen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
3	Southampton to Goderich	3	85	10000	21	4	800	12	950	96000	9600	...	...	...	1	200	...	...	3
4	Goderich to Blue Point	1	25	1500	27	27	2190	59	278	17275	2110	...	...	...	22	3315	...	...	4
5	Blue Point to Point Edward	...	...	...	...	24	1200	40	...	...	...	...	...	...	23	500	...	...	5
	Totals	9	195	26200	81	89	7500	191	2328	224255	26510	11	550	800	46	4015	...	...	
	Totals for Georgian Bay	19	358	50850	98	166	13120	392	2570	528300	65515	...	...	...	...	...	30	650	
	do North Channel	11	207	22000	62	126	13800	252	4650	303500	36000	...	...	...	37	10900	...	...	
	Grand totals for Lake Huron	39	760	99050	241	381	34420	835	9548	1056055	128025	11	550	800	83	14915	30	650	
	Lake St. Clair Division.																		
1	River St. Clair	...	...	...	...	14	540	24	...	...	...	13	780	540	...	...	...	...	1
2	Lake St. Clair, including Mitchell's Bay	...	...	...	...	32	870	74	...	...	...	19	2000	1750	6	1300	16	750	2
3	Thames River	...	...	...	...	28	275	92	...	...	...	28	870	1060	...	...	...	...	3
4	Detroit River	1	10	1000	2	18	380	30	...	...	...	19	1800	990	...	...	1	15	4
	Totals	1	10	1000	2	92	2065	220	...	...	...	79	5450	4340	6	1300	17	765	

Return of the Number and Value of Tugs and Boats, and the Quantity and Value of Fish, &c., in the **Province of Ontario**, 1897—*Continued.*

Number.	Districts.	Kinds of Fish.													Value.	Number.
		Trout, salted, brls.	Herring, salted, brls.	Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinonge, lbs.	Sturgeon, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.		
	Lake Huron (Proper)—*Continued.*														$ cts.	
1	Cape Hurd to Southhampton	280	1000	10000	125000	565400	....	....	....	....	....	....	....	4000	73,620 00	1
2	Saugeen.	....	....	....	....	15000	....	....	....	....	....	....	....	....	1,500 00	2
3	Southampton to Goderich.	....	..	12000	24430	310430	3000	5000	500	....	3000	50000	....	20000	35,827 40	3
4	Goderich to Blue Point.	....	9	86260	16510	50500	400	50810	....	....	29285	2100	575	16000	12,856 10	4
5	Blue Point to Point Edward	....	50	86970	6630	5020	....	376690	....	....	238750	....	....	5170	36,234 70	5
6	Totals	280	1059	195230	172570	946350	3400	432500	500	....	271035	52100	575	45170	160,038 20	6
7	Totals for Georgian Bay	268	758	56450	*311995	1048090	3350	382400	69000	....	22450	15000	60000	44000	164,184 60	7
8	do North Channel	....	....	102150	567471	689682	1340	259230	126530	200	105210	200	3400	....	140,937 38	8
9	Grand totals for Lake Huron	548	1817	353830	1052036	2684122	8090	1074130	196030	200	398695	67300	63975	89170	....	9
	Values $	5840	7268	7076	84162 *1530	268412	647	53706	7841	12	23921	2019	1279	1783	465,160 18	
	Lake St. Clair Division.															
1	River St. Clair	....	40	4600	2460	600	1500	161822	....	....	17800	....	....	63420	11,056 30	1
2	Lake St. Clair, including Mitchell's Bay	....	....	3100	13540	....	12170	26650	17770	2000	17640	28585	30960	122300	9,263 25	2
3	Thames River	....	....	....	....	....	26190	77680	12350	840	1600	....	6550	199360	10,737 80	3
4	Detroit River	....	....	....	29700	....	1200	10630	2030	1765	2560	....	....	31700	3,978 20	4
	Total quantities	....	40	7700	45700	600	41060	276782	32150	4605	39600	28585	37510	416780	....	
	Values	....	160	154	3656	60	3284	13839	1286	276	2376	85755	750	8335	35,035 55	

*Note.—In totals for Georgian Bay add 155 brls. of whitefish.

Return of the Number and Value of Tugs and Boats, and the Quantity

Number.	Districts.	Fishing Materials.																
		Tugs or Vessels.				Boats.			Gill Nets.			Seines.			Pound Nets.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.
	Lake Erie.			$			$				$			$		$
1	Pelee Island..............	..	....	......	.	16	1575	31	20	3000	300	..	....	....	15	2475
2	County of Essex	2	98	11000	9	38	3425	53	....	.....	......	..	....	....	42	14150
3	County of Kent........ .	2	198	15000	12	43	4575	67	....	......	....	3	550	300	47	23550
4	County of Elgin......	6	63	13100	13	29	2455	56	....	......	.. ...	..	...	....	63	22800
5	Houghton and Long Point.	4	86	9200	21	9	800	18	....	......	... .	..	...	....	22	6600
6	Port Rowan Bay......... .	.	....	....	.	17	665	60	29	1500	145	15	2000	1365	. ..	..
7	Normandale...	..	....	......	..	12	710	28	93	5520	455	.	....	....	....	....
8	East of Point Dover.......	2	48	2000	10	10	870	28	198	9900	1110	..	....	....	5	1100
9	Cayuga to Moulton Bay, including Grand River..	2	50	4000	5	10	200	20	30	9000	2500	..	....	....	....	......
10	Low Banks........ ...	..	....	......	..	6	60	6	6	3000	8300	..	....	....	....	......
11	Port Colborne...	..	....	.. ...	..	9	1000	12	9	10000	1500	..	....	....	....	.. ..
12	Ridgeway................	1	12	1500	3	10	1000	16	10	15000	2000	..	....	....	2	800
13	Fort Erie....	..	....	.. ..	..	17	850	28	3	8000	1000	..	....	....	....	......
14	Welland................	..	...	....	..	....	.....	. ..	....	.....	......	..	....	....	....	... ..
	Total quantities	19	555	55800	73	226	18185	423	398	64920	17310	18	2550	1665	196	71475
	Total values...... $	..	....	.. ...	..	....	......	..	....	......	.....	..	....	....	....	....

-and Value of Fish, &c., in the **Province of Ontario**—*Continued.*

Kinds of Fish.											Value.		
Herring, fresh, lbs.	Whitefish, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Sturgeon, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.	Caviare, lbs.	$	cts.	Number.
135470	7000	2910	8345	28660	.....	19360	2315	5270	2200	......	6,446	30	1
1005880	52600	6300	31460	....	......	61300	98500	8250	407630	......	41,353	20	2
2581350	34040	4600	222510	....	......	35010	84120	235	53840	....	71,549	40	3
1227570	88660	2835	527050	....	......	40490	52530	4950	106500	600	64,637	80	4
160010	68410	410	15630	89550	......	29915	4610	1240	51620	10475	19,202	20	5
11500	....	485	15245	11380	100	....	146610	1400	72030	.....	7,359	15	6
69560	....	305	33660	1200	......	....	37500	5900	3220	.....	4,454	00	7
200300	10910	1050	102200	8800	. . .	5580	36160	.....	56450	150	13,018	40	8
108100	6550	2025	54800	1000	200	300	•13800	500	18500	......	6,452	00	9
6000	....	800	5000	....	....	....	6000	....	6000	......	734	00	10
10000	2000	100	12900	2800	....	....	10100	......	4400	.....	1,516	00	11
19790	120	400	22215	....	......	4380	7950	....	11740	......	2,284	25	12
....	....	......	42300	....	......	54200	100	.....	500	......	5,380	00	13
....	....	2000	4000	5000	......	....	....	.... .	4000	......	640	00	14
5535530	270290	24220	1097315	148390	300	250535	500295	27745	798630	11225	....		
110710	21623	1937	54865	5935	18	15032	15008	554	15972	3367	245,026	70	

RETURN of the Number and Value of Tugs and Boats, and the Quantity

Number.	DISTRICTS.	FISHING MATERIALS.											
		Tugs or Vessels.				Boats.			Gill Nets.			Hoop Nets.	
		Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Lake Ontario, including Niagara River and other tributaries.			$			$				$		$
1	Queenstown	....	....	....	....	1	25	2	....	....	....	....	....
2	Niagara	....	....	....	....	10	1000	20	10	20000	6000	....	....
3	Port Dalhousie	1	8	1800	3	6	600	12	6	21000	6000	....	....
4	Beamsville	....	.	....	....	18	1000	25	18	30000	10000	....	....
5	Burlington Beach	....	....	....	....	17	1000	33	17	30000	10000	....	....
6	Angling and trolling in above districts	....	....	....	....	....	....	....	....	....	....	....	....
7	Counties of Halton and Peel	....	....	....	....	16	2500	45	567	56700	5200	....	....
8	County of York	....	....	....	....	8	900	11	90	9000	1200	....	....
9	County of Ontario	....	....	....	....	5	100	10	5	1050	125	....	....
10	Northumberland and Durham	....	....	....	....	20	800	30	27	40000	350	21	300
11	Rice Lake and Trent River	....	....	....	....	38	640	50	Angling and trolling			39	850
12	County of Prince Edward	3	120	5000	10	100	2500	200	121	33300	3000	27	540
13	Bay of Quinté	..	....	....	....	47	1246	79	537	14350	1450	87	1930
14	Off Lennox and Napanee River	....	....	....	....	33	680	58	170	8500	1140	57	1030
15	Amherst Island and vicinity	....	....	....	....	21	315	42	21	5770	525	....	....
16	Wolfe Island and vicinity	....	....	....	....	18	485	12	....	4000	450	20	385
	Totals	4	128	6800	13	358	13791	629	1589	273670	45440	251	5035
	Values $	....	....	....	....	....	....	....	....	....	....	....	....

NOTE.—In No. 12, 3 seines, 275 fathoms, $500.

and Value of Fish, &c., in the **Province of Ontario**—*Continued.*

KINDS OF FISH.													VALUE.	
Herring, salted, brls.	Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Sturgeon, lbs.	Eels, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.	$ cts.	Number.
....	....	....	....	4000	20000	....	....	1000	....	20000	....	....	1,980 00	1
....	38450	23690	3400	4000	24194	....	....	27450	....	8870	....	....	6,447 00	2
....	186000	3500	2350	....	5000	....	....		...	5500	....	....	4,650 00	3
....	271100	30000	21000	....	2600	....	....	260	100	1000	....	1000	10,123 60	4
....	37000	16000	20000	2200	2700	3200	....	1500	600	6100	....	1500	4,798 00	5
....	....	....	....	16000	60000	5000	....	....	....	84000	....	....	7,000 00	6
....	† 585000	1100	3500	1000	...	1200	....	....	400	800	1300	55000	13,440 00	7
....	21500	9100	6100	...	....	1000	..	...	....	....	....	10000	† 2,008 00	8
....	2100	3000	850	...	100	100	....	....	....	300	....	....	385 00	9
45	18000	8500	2500	500	....	35000	..	...	1000	....	....	45000	3,870 00	10
....	....	....	....	125100	31000	38600	110200	..	3700	10560	50000	11610	‡ 21,483 20	11
....	10000	90000	90000	5000	5000	80000	400	6000	4000	4000	....	10000	21,194 00	12
207	93250	17300	....	5490	20530	104950	2740	....	6565	35600	132750	100570	16,033 40	13
...	20000	13000	...	2600	31200	53500	....	2000	10400	70000	....	136000	10,912 00	14
....	....	68450	3400	....	2850	4250	....	....	....	1300	....	....	6,167 50	15
...	1000	8820	400	....	1520	22070	....	4000	8460	19300	21000	10400	3,679 00	16
252	1283400	292460	153500	165890	206694	348870	113340	42210	35225	267270	205050	381080	....	
1008	25668	23397	15350	13271	10335	13955	6800	2533	2113	8018	4101	7622	134,170 70	

† Smoked herrings. ‡ Partly estimated.

RETURN of the Number and Value of Tugs and Boats, and the Quantity

Number.	DISTRICTS.	FISHING MATERIALS.							
		Boats.			Gill Nets.			Hoop Nets.	
		Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Value.
	Frontenac, Leeds and Lanark Counties.		$				$		$
1	Frontenac County	58	710	63	50	2000	380	36	730
2	Fronting on County Leeds	71	3420	96	....	....	....	3	50
3	Lakes in Leeds and Lanark	26	325	44	10	135	25	52	1020
	Totals	155	4455	203	60	2135	405	91	1800
	Values $	....	....	....	....	....	....	....	....
1	St. Lawrence River (from Brockville to Lancaster)					*			
2	Prescott and Carleton Counties	....	....	....	....	....	....	....	....
3	Renfrew County	....	....	....	....	....	....	....	....
4	Lake Nipissing	....	....	....	....	....	....	....	....
5	Parry Sound and Muskoka	....	....	....	....	....	....	....	....
6	Hastings and Peterborough, including Otonabee River	....	....	....	....	....	....	....	....
7	Lake Scugog and Victoria County	....	....	....	....	....	....	....	....
8	Lakes Simcoe, Couchiching, and vicinity, including Severn and Holland Rivers	....	....	....	....	....	....	....	....
9	Wellington County and vicinity	....	....	....	....	....	....	....	....

* Angling, trolling, and with night lines.

and Value of Fish, &c., in the **Province of Ontario**—*Continued.*

KINDS OF FISH.												TOTAL VALUE.	Number.
Herring, fresh, lbs.	Whitefish, lbs.	Trout, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Sturgeon, lbs.	Eels, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.		
												$ cts.	
7200	......	7100	4000	1000	53450	....	....	16750	3500	41000	11300	5,518 00	1
......	......	......	50500	.....	123000	1800	82700	64550	30400	11200	85500	20,749 00	2
1300	....	1300	2800	2400	5850	.....	.....	2160	3960	21700	42640	2,269 20	3
8500	....	8400	57300	3400	182300	1800	82700	83460	37860	73900	139440	....	
170	......	840	4584	170	7292	108	4962	5007	1135	1478	2788	28,536 20	
......	....	.....	1500	500	7000	250	10200	1200	600	.....	5800	1,258 00	1
..	....	....	8550	7600	14750	8475	5000	4600	8100	33800	50750	4,672 50	2
.....	......	......	1500	1650	5000	...	3100	300	1000	700	10000	850 00	3
.....	.....	....	......	.....	9000	....	4000	....	....	....	14000	880 50	4
.....	3750	19700	16550	22250	6050	6350	...	....	10950	2950	33100	6,379 00	5
.....	4000	71600	198750	1000	800	335250	.....	5430	2100	12550	94200	46,100 80	6
......	...	.....	109000	....	....	120000	...	4200	....	.....	135000	18,872 00	7
23000	30000	70500	45000	16500	4000	25000	2500	....	16000	10000	50000	17,825 00	8
......	.....	16400	2000	....	...	...	......	....	1200	2000	13000	2,136 00	9

RETURN of the Number of Tugs, Boats, &c., and the Quantity and Value of Fish, &c., and other fixtures employed, in the **Province of Ontario**, for the Year 1897.

		Fishing Materials.															
		Tugs or Vessels.				Boats.			Gill Nets.			Seines.			Pound Nets.		
Number.	Districts.	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Number.	Fathoms.	Value.	Number.	Fathoms.	Value.	Number.	Value.	Number.
				$			$				$			$		$	
1	Lake of the Woods	10	304	13300	27	34	2650	90	65	14000	1200				60	9000	1
2	Lake Superior	10	372	26400	65	93	15600	188	907	238100	31140				50	9250	2
3	Lake Huron, including Georgian Bay	39	760	99050	241	381	34420	835	9548	1056055	128025	11	550	800	83	14915	3
4	Lake St. Clair	1	10	1000	2	92	2065	220				79	5450	4340	6	1300	4
5	Lake Erie	19	555	55800	73	226	18185	423	398	64920	17310	18	2550	1665	196	71475	5
6	Lake Ontario	4	128	6800	13	358	13791	629	1589	273670	45444	3	275	500			6
7	Frontenac, Leeds and Lanark					155	4455	203	60	2135	405						7
8	St. Lawrence River, Brockville to Lancaster																8
9	Prescott and Carleton Counties																9
10	Renfrew County																10
11	Lake Nipissing																11
12	Parry Sound and Muskoka																12
13	Hastings, Peterborough and Otonabee River																13
14	Lake Scugog and Victoria County																14
15	Lake Simcoe, Couchiching and vicinity, including Severn and Holland Rivers																15
16	Wellington County and vicinity																16
	Totals	83	2129	202350	421	1339	91166	2588	12567	1648880	223520	111	8825	7305	395	105940	

RETURN of the Number of Tugs, Boats, &c., and the Quantity and Value of Fish, &c., and other fixtures employed, in the **Province of Ontario,** for the Year 1897—*Continued.*

Number.	Districts.	Fishing Material.				Other Fixtures Used in Fishing.				Kinds of Fish.						Number.
		Hoop Nets or Verveux.		Night Lines.		Freezers and Ice Houses.		Piers and Wharves.		Whitefish, salted, brls.	Whitefish, lbs.	Herring, salted, brls.	Herring, fresh, lbs.	Trout, salted, brls.	Trout, lbs.	
		Number.	Value.	Hooks.	Value.	Number.	Value.	Number.	Value.							
			$		$		$		$							
1	Lake of the Woods	15	500			16	11600	3	2500		437820				26830	1
2	Lake Superior					21	9350	28	7250	136	685875		33700	1140	1324925	2
3	Lake Huron, including Georgian Bay	30	650			53	26800	46	18550	155	1052036	1817	353830	548	2684122	3
4	Lake St. Clair	17	765	5400	85	5	500				45700	40	7700		600	4
5	Lake Erie			46450	1075	60	21690	15	1300		270290		5535530			5
6	Lake Ontario	251	5035	5500	510	43	3010	27	880		292460	252	1283400		153500	6
7	Frontenac, Leeds and Lanark	91	1800	12850	300								8500		8400	7
8	St. Lawrence River, Brockville to Lancaster															8
9	Prescott and Carleton Counties															9
10	Renfrew County															10
11	Lake Nipissing															11
12	Parry Sound and Muskoka										3750				19700	12
13	Hastings, Peterborough and Otonabee River										4000				71600	13
14	Lake Scugog and Victoria County															14
15	Lake Simcoe, Couchiching and vicinity; including Severn and Holland Rivers										30000		23000		70500	15
16	Wellington County and vicinity														16400	16
	Totals	404	8750	70200	1970	198	72950	119	30480	291	2821931	2109	7245660	1688	4376577	

RETURN of the Number of Tugs, Boats, &c., and the Quantity and Value of Fish, &c., and other fixtures employed, in the **Province of Ontario**, for the Year 1897—*Concluded.*

Number.	Districts.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Maskinongé, lbs.	Eels, lbs.	Perch, lbs.	Catfish, lbs.	Mixed and coarse fish, lbs.	Sturgeon, lbs.	Caviare, lbs.	Bladders, lbs.	Value.	Number.
													$ cts.	
1	Lake of the Woods	....	133650	33760	4020	....	....	....	127130	214154	31050	608	71,175 94	1
2	Lake Superior	....	98278	1410	....	....	....	....	....	32945	....	....	207,743 50	2
3	Lake Huron, including Georgian Bay	8090	1074130	196030	200	....	67300	63975	89170	398695	....	....	465,160 18	3
4	Lake St. Clair	41060	276782	32150	4605	....	28585	37510	416780	39600	....	....	35,035 55	4
5	Lake Erie	24220	1097315	148399	300	....	500295	27745	798630	250535	11225	....	245,026 70	5
6	Lake Ontario	165890	206694	348870	113340	35225	267270	205050	381080	42210	....	....	134,170 70	6
7	Frontenac, Leeds and Lanark	57300	3400	182300	1800	83460	37860	73900	139440	82700	....	....	28,536 20	7
8	St. Lawrence River, Brockville to Lancaster	1500	500	7000	250	1200	600	....	5800	10200	....	....	1,258 00	8
9	Prescott and Carleton Counties	8550	7600	14750	8475	4600	8100	33800	50750	5000	....	....	4,672 50	9
10	Renfrew County	1500	1650	5000	....	300	1000	700	10000	3100	....	....	850 50	10
11	Lake Nipissing	....	....	9000	....	....	....	....	14000	4000	....	....	880 00	11
12	Parry Sound and Muskoka	16550	22250	6050	6350	....	10950	2950	33100	....	....	....	6,379 00	12
13	Hasting, Peterborough and Otonabee River	198750	1000	800	335250	5430	2100	12550	94200	....	....	....	46,100 80	13
14	Lake Scugog and Victoria County	109000	....	....	120000	4200	....	....	135000	....	....	....	18,872 00	14
15	Lake Simcoe, Couchiching and vicinity, including Severn and Holland Rivers	45000	16500	4000	25000	....	16000	10000	50000	2500	....	....	17,825 00	15
16	Wellington County and vicinity	2000	....	....	....	....	1200	2000	13000	....	....	....	2,136 00	16
	Totals	679410	2939749	989510	619590	134415	941260	470180	2358080	1085639	42275	608	1,285,822 57	

RECAPITULATION

Of the Yield of the Fisheries of the **Province of Ontario** for the Year 1897.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Whitefish	Brls.	291	10 00	2,910 00
do	Lbs.	2,821,931	0 08	225,754 48
Herring	Brls.	2,109	4 00	8,436 00
do fresh	Lbs.	7,445,660	0 02	148,913 20
Trout	Brls.	1,688	10 00	16,880 00
do	Lbs.	4,376,577	0 10	437,657 70
Bass	„	679,410	0 08	54,352 80
Pickerel	„	2,939,749	0 05	146,987 45
Pike	„	989,510	0 04	39,580 40
Maskinongé	„	619,590	0 06	37,175 40
Sturgeon	„	1,085,639	0 06	65,138 34
Caviare	„	42,275	0 30	12,682 50
Bladders	„	608	0 80	486 40
Eels	„	134,415	0 06	8,064 90
Perch	„	941,260	0 03	28,237 80
Catfish	„	470,180	0 02	9,403 60
Coarse fish	„	2,358,080	0 02	47,161 60
Total				1,289,822 57

RECAPITULATION

Of all Fishing Vessels and Boats and other Fishing Material employed, in the **Province of Ontario**, for the Year 1897.

Articles.	Value.	Total Value.
	$	$
83 vessels, (2,129 tons, 421 men)	202,350	
1,339 boats, (2,588 men)	91,166	
12,567 gill nets, (1,648,880 fathoms)	223,520	
111 seines, (8,825 fathoms)	7,305	524,341
395 pound nets	105,940	
404 hoop nets	8,750	
70,200 hooks	1,970	116,660
198 freezers	72,950	
110 piers and wharfs	30,480	103,430
Total value		744,431

APPENDIX No. 11.

REPORT

ON

CANADIAN OYSTER FISHERIES

AND

OYSTER CULTURE

BY

ERNEST KEMP,

Oyster Expert, Department of Marine and Fisheries.

The Department of Marine and Fisheries have, from time to time, received various reports on oyster culture, written by officials, which have either been printed in the annual reports, or recorded on file ; but what is really required by the oyster culturists of this Dominion is a "practical guide," to assist them in their undertakings in maintaining a supply of oysters on their own grounds, to grow them successfully, and by care, industry and attention, to increase the supply, with the object in view of sending oysters to the markets superior to those obtained on the natural beds. The practical cultivation of oysters is successfully carried on in the United States, France, Great Britain, Holland and other countries.

The most effectual means will doubtless be adopted by the several countries. As an officer of the department, with the long practical experience I have had, and by collecting what material I can, for the purpose of assisting and instructing those interested in the cultivation of oysters, I have compiled the following general sketch and guide upon the subject. There is one thing that has to be borne in mind in the Dominion, and that is the length and severity of the winter ; a great many persons are under the impression that oysters can be cultivated here on a very large scale, artificially, as in other countries where the temperature is not so low as it is here, and which I will explain later on. Natural oyster areas are found from Caraquette Harbour, in Gloucester County, New Brunswick, following the shores down along the Nova Scotia coast as far as the entrance of the Strait of Canso, the greater part of Prince Edward Island, and Cape Breton, with the rivers and creeks adjoining, altogether comprising a considerable area of oyster beds, or what might be converted into beds by labour and patience, in the maritime provinces. Another species of oyster, viz., *ostrea lurida*, is in British Columbia, but up to the present time very little attention has been given to their culture, and it is to the former areas that I principally allude. It is in those waters where oysters have been, and are still growing that attention should be directed, to protect the public beds from utter destruction, and where oysters could be successfully cultivated by private individuals or companies, as the case may be.

In the first place, the question arises, what is an oyster ? It is found widespread in the world. For food purposes, oysters are much sought after, and were well known in the remote past. They are of excessive fecundity where suitable soil exists, and attain their full growth between three and four years. The demand has now grown to such an extent that it is greater than the supply. This is a well-known fact by every one in any way connected with or near the sea, and the requirement is such that the bivalve is now being carried far inland, that it would be a difficult matter to find any one who really does not know what an oyster is, but it may be briefly described as a succulent edible mollusk or shell-fish. Its shell is double, or consists of two valves which can be opened or closed by means of the adductor muscle. In the cockle, the clam and mussel, there are two adductors, but in the oyster only one. In the adult state the oyster is fixed and adheres to the surface on which it rests. The right valve is flat, and is smaller and thinner than the left, and in a corresponding manner the right side of the oyster's fleshy body is more developed than the left, and so far it departs from the bilateral symmetry of the class to which the oyster belongs. In our Canadian oyster the sexes are separate, eggs being produced in certain individuals and sperms in other individuals. In the European oyster, eggs and sperms are produced in the same individual, and the life of the embryo and the developed larval oyster considerably differs in the two kinds (the Atlantic and European oyster).

DEPLETION AND ITS CAUSES.

The causes of the depletion of Canadian oysters are many, and on referring to the annual reports we can at once see the recklessness with which both oysters and areas have had to contend. Oysters were taken, until a very recent date, all the year round, and of all sizes. During the fishing season, oysters were caught irrespective of size, but as these could not all be sent into the market, the small were culled out, and thrown up in piles to rot. This method was a case of wholesale slaughter, more oysters being destroyed than were actually sent into the market. As they were not nearly full grown, the result was heavy losses to the beds, which, of course, eventually seriously affected the obtaining of any considerable quantity of spat. The beds have also suffered considerably on account of being fished during the winter months through the ice, the large ones being culled out, the small ones left on the ice to perish with the frost and cold.

Another evil to which the Canadian oyster beds have been subject, and, so far as I know, it does not exist elsewhere, is the system of mud-digging. To show the extent of this, and other depredations, so injurious to the propagation of the oyster, the following extracts from the annual reports are given. They fully explain the abuse the oyster industry has received at the hands of fishermen, farmers and others ; also, some very valuable hints and advice, which, if carried out, would greatly assist in reviving many of the depleted beds and unworked areas. There are some extracts taken from the Deputy Minister's report, showing what action, from time to time, has been taken in the matter by the department. The reports are classed according to provinces. As early as 1868, and even previous to that date, suggestions were made, and experiments tried by different persons interested in oyster culture, therefore the reports are from that time onward :—

NEW BRUNSWICK.

In the annual report for 1868, pages 64 and 65, the Hon. J. Ferguson, of Bathurst, states as follows :

"That four thousand barrels of oysters are shipped from the Caraquette beds annually to Quebec and Montreal. The oyster beds are not as productive as formerly, and, with a view to their preservation, are not allowed to be taken between 1st June and 1st September. My impression is that the grounds should be laid off in lots and fished alternately, and a fine imposed on persons selling undersized oysters. This could be effected by the supervision of a warden authorized to visit the grounds during the oyster season in September and October, when vessels are loading."

Inspector Venning, in his report of 1871, page 131, points out the necessity of some action being carried into effect to protect the beds and develop the industry, as follows:

"On the subject of the restoration of the oyster beds in New Brunswick, and the adoption of some means by which the production of this mollusk may be increased, both in New Brunswick and Nova Scotia, by planting new beds in localities favourable to their growth, I have in former reports said so much that I know not what further to say. The close time provided by law has been rigidly enforced, but excessive and indiscriminate raking of the same beds during the whole open season, year after year, not only prevents any increase, but must necessarily, steadily and surely, exhaust them, and if some more effectual means are not adopted, every known bed in the province will soon be destroyed. The simplest, wisest and most effective means of increasing the production of oysters in New Brunswick and Nova Scotia is to lease all localities favourable to their growth (whether old beds exist there or not) on such terms as will induce practical men to invest capital in their cultivation. This is the means adopted in other countries, and no other will, in my opinion, ever succeed to any extent, because, so long as natural beds are common property, they will be raked just as often and as long as any oysters can be found to rake. The protection provided by the Fisheries Act has now been applied for four years, and the result is nil—in fact, the beds are worse by just so many barrels as have been taken from them, until they are now not worth raking in most places where they were formerly abundant. These remarks apply more particularly to Shediac, Cocagne, Buctouche and Richibucto, but, in other localities, the same causes are fast producing the same results, for it is plain that no locality can stand this constant and unremitting drain, by primitive and clumsy implements, the use of which destroys as many oysters as are raised by them. To have any fair chance to increase, the beds should be raked but once every three or four years, and, in the intervals, they should not be disturbed; but, of course, those who have no particular interest in them care only for the present, utterly regardless of the future. Next to leasing, the most effectual mode of securing an increase in existing beds, will be setting them apart for a number of years—say twelve or fifteen—and prohibiting all disturbance of them during that time. If none of these methods are adopted, a few years will see the last of the very best oysters in the world. In this connection, I may state that the operations of Hon. A. Macfarlane. in Malagash Bay, Colchester County, bid fair to be entirely successful. He has already planted new beds, and the young oysters are growing rapidly, proving beyond a doubt that oysters can be cultivated on our coasts with as much certainty as a crop of grain can be sown and gathered. Considering the growing demand for this delicious luxury, and the large markets that will be open for it when the Intercolonial Railroad is completed, it is a subject of great regret that our unrivalled facilities for oyster production to any desired extent should not at once be utilized, by the adoption of any and all means which will secure the result. At present the existing beds are a source of profit to no one, and there is no reasonable prospect, under the present system, of their ever becoming such; on the contrary, there is an absolute certainty that their total extinction is not far distant. I respectfully urge the reconsideration of this matter, and the adoption of some means by which this valuable resource may be preserved and developed."

*From annual report, 1878, page 253:**

"*Oyster Fishery.*—With respect to this once valuable fishery, I can only repeat the oft-told tale of its rapidly approaching extinction. The beds that now remain yield but small returns for excessive and laborious raking. This yield is every year becoming less, and the size smaller. The close time affords no adequate protection, because the constant raking of the beds prevents the growth of the young. There is no system, care, or thought for the future. Nothing but blind and ignorant labour, year after year, in raking the nearly exhausted beds.

As no effort at artificial culture has yet been made, and as none of the beds are allowed the rest necessary for their recuperation, the total extinction of all is inevitable, and not far distant. The only protective measure I can now suggest is a compulsory rest for several years, and after that, stringent regulations for the proper working of the beds in such rotation as will permit the fish to multiply and the young to attain maturity."

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*By Inspector Venning.

From annual report, 1883, page 71 :: *

"The demand for oysters and the good prices obtained have stimulated production everywhere, and the depleted beds are now raked more industriously than ever. Like the 'tailings' of the gold diggings, something can yet be tortured out of some of them; but these very efforts to meet the demand shut the door against all hope of any improvement from natural increase. In Westmorland, where the largest supplies were formerly obtained, the increased demand and improved prices have failed to produce an increased yield, which clearly shows that these once prolific beds are now exhausted. Over-fishing and indiscriminate raking have done their work very effectually. Oyster culture by private enterprise is the only means by which an increased supply can now be obtained."

From annual report, 1885, pages 147 and 156 : *

"The great demand for this mollusk, and the high prices offered, have so stimulated production that the returns show a considerable increase in the quantity raked. This increase comes entirely from the beds in Northumberland, which have hitherto not been so persistently raked, because the quality of the oyster is inferior to those of Kent and Westmorland, where the beds are now nearly exhausted. As long as these beds would pay for raking, those in Miramichi bays were left comparatively undisturbed, except by residents for local use. But now, when all other beds are exhausted, vessels from all parts of the province, and even from Quebec, flock to these, and rake them without cessation, from the opening to the close of the season. I cannot too strongly urge some regulations which will save from destruction the only oyster beds left in the province. It is very desirable that some inducement should be held out to introduce the system of oyster culture now pursued in the neighbouring States. Every facility should be given to private enterprise to make oyster planting successful, for only in this way will the demand ever be supplied. Several applications have been made, and are now on file in the department, for lease of certain defined limits within which to cultivate oysters. For these I would respectfully urge your favourable consideration.

"The only oyster beds in the province that will now repay the labour of raking, are those in Miramichi Bay and River. These are being destroyed as fast as ignorant cupidity and selfish greed can accomplish this end. There are absolutely no regulations to prevent this being done, and consequently fishery officers can only look on and see the work of extermination progress. It is very desirable that these beds be saved from destruction, and if this can be done in no other way, I would recommend that they be leased to responsible parties, who will rake them judiciously and keep them productive. Any measure that will prolong their existence will be acceptable to the people of the county, who are most interested in them, and infinitely preferable to the present absence of any protection.

Overseer Williston, of Bay du Vin district, reports :

"A great increase in the number of vessels raking oysters in the bay, and strongly recommends some regulations to prevent their destruction from excessive raking. He says : 'It is hard for our people, who have pleaded for the protection of the only oysters left in the province, to see these vessels covering the beds and raking indiscriminately, without order or method, intent only on grabbing all they can, and feel that they are powerless to prevent the destruction. These vessels bring their own crews and supplies, employ no local labour, pay no taxes or license fees, contribute nothing to the revenue, and leave exhausted and ruined beds behind them. It is safe to say that, by their rude and wasteful method of raking they destroy as many oysters as they raise. It would be better to lease the beds to those who would rake them fairly, and keep them productive, than to have them thus recklessly destroyed by strangers, who have no interest in them except what they can get in the general game of grab.'

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*By Inspector Venning.

From annual report, 1887, page 143 : *

"The failing beds of Caraquet and Bay du Vin have furnished almost the whole catch of 23,196 barrels. All the oyster men formerly scattered over the beds of Shemogue, Shediac, Cocagne, Buctouche and Richibucto now flock to the only beds that will repay raking. How much longer they will do so under this excessive working will very soon be decided. It is much to be hoped that the Commission appointed last summer to inquire into and report on the lobster and oyster fisheries of the maritime provinces will recommend some practical measure to save these once valuable sources of profitable industry from final destruction.

The oyster beds continue to be raked excessively during the whole open season, and now winter raking through the ice has been commenced on a large scale, which will hasten the destruction of these, the only remaining beds in the province that are not practically exhausted.

From annual report, 1888, page 97 : *

"The catch of oysters is less than that of last year by 6,812 barrels. Nearly the whole catch of 16,384 barrels came from the beds of Gloucester and Northumberland. Those of Kent and Westmorland, which formerly were said to be inexhaustible, are now nearly extinct. Kent County produced this year from all her beds in St. Louis, Richibucto, Buctouche and Cocagne, but 2,000 barrels, while all the beds in Westmorland have yielded only 106 barrels. As most of the oyster fishermen now concentrate their operations on the Gloucester and Northumberland beds, these are being exhausted faster than ever. How much longer these will pay for raking remains to be seen ; but unless some comprehensive measure of protection is applied, the time must be very short. For twenty-one years I have been urging protection for our oyster beds ; but their destruction has gone steadily on ; year after year has passed without a single step being taken to prevent indiscriminate raking and wanton waste."

PRINCE EDWARD ISLAND.

The following are some extracts taken from the annual report of 1873, page 197, written by the late Hon. W. H. Pope, and others :—

"Oysters have flourished in every tidal river and bay in Prince Edward Island. At the present time, productive oyster beds are found in Richmond, Cascumpec and Hillsborough bays, and in the rivers flowing into these inland waters. I might almost say in these localities alone. Oysters are fished with "tongs" in depths varying from three or four feet to twelve, and even fifteen feet. It is scarcely practicable to fish oysters with tongs at a greater depth than fifteen feet."

"During the past ten or twelve years, *millions* of tons of oyster shells and mud have been taken up by our farmers, from oyster beds, by means of dredging machines, worked by horses on the ice. In many instances the beds have been cut through, and in some places the deposits of shells have been found to be upwards of twenty feet in thickness. It is probable that many of the oyster beds ceased to be productive of oysters ages before the settlement of the country by Europeans. Extensive deposits of oyster shells are now found covered by several feet of silt. How were the oysters upon these beds destroyed? The natural process of reproduction and decay would cause the oyster beds formed on the bottom to rise so near to the surface of the water, that the ice would rest on them. The weight of heavy masses of ice upon the beds would injure the oysters, and the moving of the ice, when forced by tide or wind across the bed, would soon destroy them. I have observed the more elevated portions of an oyster bed, over which ice had been thus forced. Several inches of the surface of the bed, including all the living oysters, had been driven before the ice, and the shells and oysters so removed, had been deposited in a minature *moraine* on the slope of the bed, where the water was sufficiently deep to allow the ice to pass over it. This crushing and grinding process would destroy many of the oysters ; some would be crushed and broken, others smothered in the *moraine*. The gradual silting up of the river would prevent the running of the ice, and the oyster beds would, in time, be covered, as we now find them. Deposits of oyster shells (covered with mud), twenty feet in depth, are found in rivers, in the deepest parts of which there are not now fourteen feet of water."

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*By Inspector Venning.

"Oysters thrive on muddy bottoms, but they will not live if imbedded in mud; many oyster beds have been destroyed by mud alone. The annual fishing of oyster beds, if not carried to excess, improves them. In the process of fishing, the surface of the bed is broken up, the shells and oysters lifted out of the mud, and a supply of material (cultch) afforded such as the oyster *spat* requires, and without which it must perish."

"Oysters upon natural beds are seldom, if ever, killed by frost. I have known oysters to thrive upon a hard stony bottom, notwithstanding that the ice rested upon them once in every twenty-four hours throughout the winter. Some of these oysters grew adherent to a small flat rock about eight inches in thickness. The oysters on the top of the rock were killed when they attained their second year's growth, I think, by pressure, as those on its edges were never injured by ice or cold."

"Oyster beds in rivers in which saw-dust is thrown in large quantities would probably be injured by it. The saw-dust would, I think, be carried by the current over the beds, and the roughness of their surfaces would detain some of it. The interstices between the shells and oysters would probably become filled with saw-dust and mud. Mud and decomposing saw-dust constitute a most offensive compound."

"The area of productive oyster beds in the Dominion is comparatively limited, and altogether inadequate to supply the demand for oysters which is now enormous, and which is increasing every year. Unless the existing beds be protected and improved, and new beds formed, the day will soon come when the oyster beds of the Dominion will cease to produce. Our neighbours of the United States tell us that Virginia alone possesses more than one-and-a-half millions of acres of oyster beds, and, notwithstanding the fact that oysters increase much more rapidly in the warmer waters of Virginia than they do in this latitude, the authorities of that State have expressed their fears that the oyster beds of Virginia, if left open to the world, and dredged at all seasons of the year, will become extinct."

"The rivers and estuaries of this island are admirably adapted for the cultivation of oysters. The oysters found in its bays are not to be excelled in flavour, and if fished late in autumn they will keep good for months. I see no reason why hundreds of thousands of acres of oyster beds should not be formed in these bays, which would produce vast quantities of oysters in quality much superior to the oysters of Virginia. The material for the formation of such beds is at hand in the ancient ones; and oysters with which to sow them could be had at little cost during the warm calm days of summer."

"We have a 'close season,' from June until September, but the law prohibiting fishing during this season is openly violated. Oysters are caught and exposed for sale in every month in the year, and salmon are destroyed upon their spawning beds with the utmost impunity. I shall be happy to hear that the Dominion Government have resolved to enforce the laws for the protection of oysters, salmon and trout. We now form part of the Dominion, as you know, and have a right to look for wiser legislation and a better administration of law."

"Do you think oysters would thrive in somewhat deeper water than that in which they are now found, if sown there? I think they would thrive in the deepest part of any inland water, if placed upon suitable ground."

Mr. Pope expresses the hope that the Minister of Marine and Fisheries will think proper to appoint a commission to report upon the oysters and oyster fisheries of the island, and intimates that in such an event he would have no objection to give his services gratuitously."

"Many once productive beds, in various parts of the Gulf, now yield almost nothing; and there is too much reason to fear that unless precautionary measures are adopted, the oyster fisheries of the eastern part of the Dominion will soon become a thing of the past. The raking of the beds has been palpably excessive and wasteful; no such thing as cleansing the ground and scattering the spat during the close season has ever been practised; the pollution of the grounds by refuse of mills, by silting up, and a variety of other causes, had led to the present state of ruin and decay which we now see. Neglect, waste, and excessive cupidity have almost destroyed these oyster beds, and will ultimately entirely do so unless remedial measures are adopted."

From annual report, 1879, page 268 : *

"From some reason of demand and supply, the oyster fishery has scarcely been prosecuted this year with the usual vigour, consequently the returns are not in excess. Prices have ruled low, thus discouraging the industry. There is no special feature to report. A good deal of poaching took place in the east and west of Queen's County, Richmond Bay, in Prince County, and elsewhere where there are no wardens. Such measures of repression were taken as the circumstances permitted. Some thieving also took place from private oyster beds, which depredations were promptly checked."

"The abundance of eels in the vicinity of some of the spawning beds is believed to be very detrimental to the increase. Storms last fall and this spring did some damage by silting over the beds, but not to an extent to affect the fishery."

"The digging of 'mussel mud' for manure—mussel mud being the shells of old oyster beds—is very harmful to the live beds, but it is scarcely to be doubted that the benefit to the county is of more absolute value than the preservation of the oysters, Deep holes are excavated in the bed of the oyster grounds and the spawn washed into these holes is silted over and perishes. The local law expressly protects diggers of such manure from damages if live oysters are taken. Custom has established that inlets, even on the frontage of farms, are free to all, although an eminent authority, the late Judge Pope, of this province, freely expressed a different opinion. Were a test case established in the courts that the oyster beds, old and new, on the frontage of farms belong to the owners of the shore, better regulations would be adopted, yet outsiders be still permitted to procure manure on payment of a small royalty. Such a regulation once established would materially assist in preserving the live beds."

"In connection with shell-fish it may be referred to as odd that none of our enterprising employers of fishermen have yet established a mussel-farm for bait, such as those of the Bay of Aiguillan, France, neither has any oyster-grower adopted the plan of the oyster *plats* of the Ile de Ré, nor any person fitted up an ice-house for the preservation of bait."

From annual report, 1880, page 239 : *

"Illegal oyster fishing causes considerable trouble. Any person (excepting the fishery officers) can procure oysters in Charlottetown and some other places at any time throughout the close season. The general public appear incapable of believing that during close time shell-fish are unfit for food. Wherever there is demand there will be supply, and as the restaurants are besought for oysters even during the hot days in summer, they manage to minister to the depraved taste of their customers. I was in hopes that the appointment of a special warden for Charlottetown would prevent supplies being smuggled to the receivers in town, but as it somehow has not answered the purpose, other arrangements will be required for next year.

"Although it is to be hoped, even for hygenic reasons, that the vicious propensity of eating unclean shell-fish may be educated out, there is a more destructive agency to the oyster fishery in 'mussel mudding,' or the taking of oyster shells for lime. As matters at present stand, the almost complete extinction of oysters in Prince Edward Island is only a question of time, and, unless circumstances altogether hostile can be reconciled, that time will be a short one. At present it is a tussle between the farmer and fishmonger, and the weaker will go to the wall. Let me take some pains to make this clearly understood by the department.

"The soil of almost the whole province of Prince Edward Island is a light loam from disintegrated new red sandstone, so deficient in lime as not to effervesce with acids. There is no limestone to speak of. Crude stone for the few lime kilns at present burning has to be imported from Nova Scotia, New Brunswick and Anticosti. Agricultural lime is, however, an absolute necessity. Hence the immense value to the farmer of what is known as 'mussle mud,' that is, the shells and marine deposits of old oyster beds, which supply a large percentage of the purest lime, the remainder being animal matter and marine alluvium, themselves valuable fertilisers. It is not saying too much to assert that the product of grass and grain has been increased one-third by the use of this mud during the few years since it began to be generally made use of. Twenty, not exceeding thirty, sleigh loads is the quantity used per acre. Last year the bulk extracted from the oyster beds could not have been less than 200,000 loads, at a rough calculation, and as it is now conveyed inland by railway, the demand is vastly increasing. During the season of winter the cumbrous digging machines, worked by horse-power, and each attended by two or three men, cover the oyster creeks like a scattered encampment.

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*Inspector J. Hunter Duvar.

"The island coast is fringed by innumerable creeks—our so-called river mouths—over beds of sand, paved with patches of broken sandstone or with an alluvial mud, not soft enough to be called ooze. Many miniature bays present the like conditions. From time immemorial oysters have propagated on these floors. Like the coral worm the bivalves are continually building up reefs. The tides covering these oyster reefs have no rapid rise or fall to wash the spat out to sea, the medium rise on the gulf being about three feet, and on the Straits of Northumberland not very much more in the sheltered coves. Geological indications testify that many of the creeks and inlets were formerly deeper and narrower than they are now. Stratum on stratum of oysters grew in them, the underlying layers dying in the ordinary course of decay, each as it died forming a bed for its successor. On each stratum grew other strata intermingled with drift continually growing higher until the reef reached into the region of the ice, when, of course, the surface stratum, then the only one alive, perished. It is this "midden" of mingled oyster shells and muck that is called a mussel mud bed. Live beds are undergoing the same process of decay and growth, and are continually increasing in height, although yet below the level at which they come in contact with the rasping of drift ice. Over these beds, alive and dead, the digging machines are erected, and cut deep sections in the banks of shells.

"It will be seen that without the added destruction of the mud-diggers every oyster bed will perish naturally in process of time, but new beds would form in an ever enlarging radius, if left undisturbed. In three or, at most, four years from the time the floating spawn fixes itself in a new locality, full grown oysters are to be found.

"Prior to confederation a good deal of tinkering was done by local legislation in regard to oysters. In the time of William the Fourth an Act was passed to prevent the practice of burning live oysters for lime. I am under the impression that at one time export was prohibited for a period of three years. By another Act all persons, except resident islanders, were forbidden to fish, under pain of fine and forfeiture. In 1865, regulations were made for leasing, by auction, certain localities laid off as public preserves, and persons owning creek lands were encouraged to apply for a grant of their water frontages for oyster culture. So far, so well. But next session an Act, remarkable for its crudity of expression and disregard of statute rights, was passed containing this clause: 'Nothing shall prejudice the right of any person to take from any river, whether within the bounds of any oyster fishery which shall have been or may be granted or otherwise, any mud, mussels, or mud mixed with shells of any kind, *bona fide* intended for the purpose of manure, to be used within this island, although some of the oysters or oyster brood should be thereby unavoidably taken, removed or disturbed.'

"After the lapse of some years this section was amended, but the objectionable clause was suffered to remain. Thus the matter at present stands, and it strikes me, as a mere layman, that some nice questions of jurisprudence arise out of the position. Such are—in how far can Dominion enactment in regard to the fisheries preclude the local power of legislating on a different specific subject, namely, the promotion of agriculture? And, on the other hand, what right has local legislation to set at nought Dominion legislation by authorizing the disturbance of Dominion fisheries—shell-fish being under the Act?

"It is apparent what an anomalous position the Prince Edward Island oyster fishery is in when the General Fishery Law protects and requires its wardens to protect the oyster beds from fishermen in summer, in order that they may be destroyed, under the local law, by the farmers in winter. Such, however, is precisely the case under the conflicting jurisdictions.

"A practical remedy is hard to suggest. The object is, of course, at one and the same time to retain the oyster beds from extinction, and to interfere as little as possible with the valuable privilege of the agriculturist. Perhaps both objects might be attained by repealing the obnoxious section of the local Act, or declaring it superseded, and substituting therefor a regulation setting aside certain spaces as Government reserves to be offered on lease, and further, by encouraging anew applications for grants of shore for oyster culture. Even were this done to a reasonable extent, and were such leases and grants wholly exempted from infringement by diggers, there would still be room enough on dead beds for the requirements of the farmers. Theoretically, the fishery wardens might annually lay off defined localities for the use of the diggers, but practically an employment requiring so much care, time and expense of travelling is beyond the reach of the present staff.

"Any comparison between the relative values of mussel mud and oysters must be, in a manner, fanciful, for the reason that the market price of a load of manure bears but a slender proportion to its results when applied by the hand of skilful labour. Mud is sold, lifted on the ice, at eight cents per load, and, at a low estimate, there must be equal to one thousand farmers who use two hundred loads each per annum. Cash value of 200,000 loads of mud at 8 cents, $16,000—an amount not directly brought into the island. Quantity of oysters legitimately taken the past year, say 30,000 barrels, of which 20,000 barrels were exported at $1 per barrel, cost price, $20,000, which money is brought into the island; to which I must reluctantly add an estimate of 500 barrels illegally taken in the close season for home consumption. Statistics accompanying the next census returns will give the exact number of mudding machines, at which, at present, I only guess.

"The breeding of oysters artificially is now among the established industries of the age. Prince and Queen's Counties, as well as several localities in King's, are especially well adapted to oyster culture. This province, too, has the advantage of having its name known as an oyster-producing country. The famous Bedeque oysters were long a *bonne bouche* loved of epicures. Bedeque is now oysterless. Almost all that is required to partially restore the perishing fishery is a system of inexpensive grants or leases, and protection against disturbance of the beds. The conditions, however, are indispensable, for no scheme of destruction could be devised more certain to obliterate oysters from the list of island products than the digging of innumerable mud holes into which the spawn is washed and, being silted over, perishes. Oyster culturists would, no doubt, attempt to remedy this by the use of intercepting fences of faggots, but such, at best, is a partial expedient.

"As this report will likely be read by persons who may be disposed to try oyster culture on a larger or smaller scale, I give a brief account of the oyster breeding establishment at the Narrows, lot 12, Prince County, the only one in the province, and the property of the Hon. J. C. Pope. The locality is on the mainland of Prince County, and extends from the shore to mid-channel of the narrows, which are here one-quarter to one-half mile in width between the mainland and Lennox Island, the property and home of the remnant of Micmac Indians. The site was leased prior to confederation, under the local Act for the encouragement of oyster culture. The system pursued is to nurse the natural beds and to build new ones where the water and bottom of hard sand and hard mud are suitable. Average rise and fall of tide about two to three feet. Fifteen acres of beds are already planted, and a new one of four acres is being laid down. During the fishing season thirty men with a like number of small boats are employed. Spawn was formerly shipped to England, but is understood not to have paid. An attempt was made to rake the beds by means of a dredge similar to those in use on the British and French coasts, but, from local causes, it was not found to answer, and the oysters are now fished up altogether with 'tongs.'

"One man in a day can fish one, two or three barrels, according to circumstances. The boats, when laden, discharge their cargoes at a receiving house, where the oysters are carefully hand-picked and separated into two marketable qualities, number ones and number twos, the number ones being exceptionally large and fine. The remainder, consisting of dead shells and small live oysters, are laid separately on the new beds in a "culch" or stratum of about six inches in depth, on which the young brood develop rapidly, and in four years from the spawn become of full marketable dimensions. The first quality of number ones are shipped chiefly to Montreal, whence they find their way to the Capital. Number twos are sold elsewhere. None are canned. It is unnecessary to put on record here the quantity annually shipped. The French method of cultivating on *plats* is not practised at this establishment, and might be rather cumbrous where other means answer the purpose, but there is no doubt it would be successful if tried. A piece of telegraph wire was recently fished up completely encrusted with good oysters of uniform size, which indicates that the method by which spat is collected on potsherds strung on wire would answer here. Now that a pottery has been established at Charlottetown, a few thousand *plats* of baked clay would cost but a trifle, and the result would be alike interesting in science and practice. It may be mentioned that the Indians are quiet neighbours, and some of the less indolent are employed in the fishery.

"In spots where it has been possible for the wardens to give strict supervision during the past two seasons, and where the ground was not disturbed by fishers of mussel mud, considerable broods of young oysters have established themselves."

From annual report, 1881, page 189 : *

"According to orders there have been forwarded to the department, charts of all existing oyster beds in island waters, together with reports on localities in which the planting of new beds would have prospect of success.

"Prince Edward Island is comparatively thickly settled, especially along the estuaries, creeks and coast, where oysters most abound. No restriction has hitherto been placed on their being fished by any resident.

"Neither has any claim been set up to individual rights of proprietorship. Prior to confederation, the local Government assumed the right—if it had it not—to the ownership of all oyster beds, but except in one feeble instance of legislation to regulate the granting of leases, no restriction on general fishing was imposed. The valuable fields of oysters were abandoned as a common, and were by the public so accepted. With the single exception of the field at Squirrel Creek, Prince County, the property of Hon. J. C. Pope, no leases of any account were taken up when offered. This position remains now. The public regard the taking of oysters anywhere, or everywhere, in the light of a common fishery.

"The articles of confederation appear to have settled the ownership of oyster beds not specially covered by land grants as resting with the Dominion Government, but the question of regulating the fishery to its injury, by local enactment does not seem to have yet come up between the general and local Governments.

"When Prince Edward Island joined the confederation of British North America, oyster fishing was signified to remain under existing local laws until regulations should be made, but no special regulations have been made. The local close time, as previously established, from 1st June to 1st September, has since been acted on. In fact, the local laws of the province, even now, regulate the oyster fishery in Prince Edward Island. Those laws permit the digging of shells, 'even although some of the oysters or oyster brood should be thereby unavoidably taken, removed or disturbed.' The popular reading of the Act is that all beds may be dug over, even if all the oysters be destroyed. During the milder days of winter, hundreds of mud-digging machines are at work cutting up the beds. It was expected that, as these machines are an institution almost peculiar to Prince Edward Island, the Island Census returns would have a column in which to show the number in use, but the enumerators took no account of them. There must, however, be not a few hundreds.

"It is, of course, the object of the diggers to strike on dead beds from which can be obtained shells in such a state of decay as to be readily crushed before the plough, when spread on the land, or to disintegrate into pure lime by the action of the winter's frost. Such beds are rarely found. If beds are below the reach of freezing, the surface is covered with a layer of live oysters, while if the centre of a bed has risen to the level of ice, the sides of the mound, within a surrounding radius, are thickly coated with live bivalves. It will thus be seen that shell digging does, of necessity, presently injure, and must ultimately destroy, the oyster fishery, unless remedial measures be adopted.

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*Inspector J. Hunter Duvar.

"In proposing a remedy, the question is how, if possible, to protect the live shell-fish without preventing the farmers from digging shell manure, a privilege of which they are justly tenacious.

"The possibility of restoring the fishery in any given locality depends on the area of beds and the present and prospective numbers of diggers. Few farmers set their machines for two consecutive seasons in the same place, but wander about over the area looking for a better location. The consequence is, that all the beds are more or less cut up, scarred and seamed with trenches in all directions. Where the area is of some extent, as in bays and larger estuaries, spaces selected with reference to existing beds, currents, depth of water and the locality where dead beds would give the farmers a clear space for digging, might be staked off as Government reserves, which it would be illegal to disturb for a period of, say, three years, which is the term in which the oyster comes to maturity. This is practicable, and in view of the relatively small area that would be reserved, could offer to the farmers no reasonable ground of objection. In creeks and small stretches of water the plan would be less applicable. A three years' reservation of a limited number of sites would allow the fishery officers time to acquire experience in the management of the reserves, and would also feel the pulse of the farmers who, no doubt, would at first be somewhat suspicious of what they may deem an infringement of their rights.

"But the project that would the most speedily place the fishery on a permanent basis would be the throwing open of sites to private lease. Localities leased would be protected by the lessees, under general supervision of the department.

"The local statutes above referred to are 28 Victoria, chapter 13, with an amendment of date 17th April, 1871, wherein it is provided that the Executive has power (individual rights reserved) to grant the exclusive right to fish for oysters or oyster brood and to form new oyster beds or feeding beds in certain rivers specified. (*Note.*—In Prince Edward Island parlance "river" means an estuary.) The leases to be sold at auction for not less than twenty years, renewable at expiry for a further term of forty years, under engagement that within five years new beds shall be made or old beds cultivated so as to increase the annual yield. In addition to this, the owner of any land fronting on suitable water might obtain a grant of his frontage.

"This offer, proper in all respects excepting the forty years' renewal, which would constitute a monopoly, was but sparingly taken advantage of, and some of the best sites are yet open. The localities first opened to offer were the following, which are still available :—Shemody, Richmond Bay, Dunk River, Prince County ; Charlottetown Harbour and certain parts of Hillsborough River, Queen's County. In King's County, Cardigan Bay. In the event of its being decided to plant new beds, any one or all of these localities are suitable for a first experiment.

"While it would be illegal to disturb such beds by digging or otherwise, an additional proviso might be made that no digging be permitted within a distance of a specified number of yards from any planted or leased beds, so that the ooze raised by digging, and held in suspension by the tide, might settle before reaching the live beds. Further, the quantity of seed oysters to be laid down within a given time, say not fewer than one to each square of two to three feet, or about twenty-four to fifty-four barrels per acre should be a feature in the lease. There should also be, as in France, legal dimensions under which no oysters may be taken from the water. It is for Your Honour to consider whether, with a view to revive the perishing oyster supply, it would be advisable (in like manner as section 12, subsection 3 of the Fisheries Act permits to be done in the case of fishways) to assist persons who will undertake, under due bonds, to plant new beds in suitable locations and protect them from being fished for the first three years, and afterwards only in such quantity as the beds will bear. This would give the Government a proprietory interest that would justify reversion at the expiry of the term of grant. If the beds were judiciously cultivated they would be a property yearly becoming more valuable.

"As in most other matters dependent on the peculiar tenure of land in this province, it would be necessary in each individual case to ascertain whether the owner of shore holds a title to the 'land covered by water' to mid-channel. I have reason to believe that in some instances this is the case, and in others not. At all events, the prospective value of the fishery deserves all that can be done for it.

"On bottom less suited for oyster culture, mussels *(Mytilus edulis)* might be grown with little trouble in extensive fields, in sheltered coves, or the brackish water of creeks. The fishermen of Scotland find mussels the best of all bait, besides being used for food. They are found scattered in clumps in the creeks of the island.

From annual report, 1882, page 173 : *

"In spite of the immense destruction done to the live oyster beds by the digging of shell manure, the wardens report that oysters were never so good or plentiful as this year—the result, evidently, of even the partial protection the fishery officers were able to enforce. What is wanted is complete protection herein by the simple remedy of granting leases. It is possible to enlist private interests in aid of Government supervision, as thus:

"Theoretically the greatest good to the greatest number in this province is subserved by placing no restriction on the taking of shell manure, wherever found, inasmuch as its use is indispensable to the limeless soil of the island, and has increased the product of grass and grain to an extent much exceeding the value of all the oysters taken since the practice of shell manuring came into vogue. But the present value of the oyster fishing is about $150,000 per annum. The question arises : Is it possible to reconcile these two interests, the farmer's and the oyster fisher's, so that the oyster fishery need not be lost?

"The answer is in the affirmative, and the required means are no more than a few simple regulations officially made and definitely carried out.

"We have the example set by the French Government in the restoration of oyster beds. At present no inconsiderable portion of the maritime population of the west coast of France find employment therefrom, and several localities have become the seats of a great oyster industry. The means adopted were very simple, namely, granting portions of the foreshore at easy rents, but under stringent regulations. Private industry did the rest, and the employment is both popular and profitable. Also, much attention is being given to oyster culture in Australia, with good results.

"Under section 12 of the Fisheries Act, the machinery of such development is ready to hand for the waters of Canada. Subsection 4 enacts :

"'Special licenses and leases for any term of years may be granted to any party or parties who may wish to plant or form oyster beds in any of the bays, inlets, harbours, creeks or rivers, or between any of the islands on the coast of Canada ; and the holder of any such lease or license shall have the exclusive right to oysters produced or found on the beds within the limits of such license, for the term of such lease.'

"By subsection 5 the Minister may annually expend an appropriation in restocking beds ; and in section 6 it is made penal *in any way to injure or disturb oyster beds*—which embraces the injury done by mud-digging.

"Having in last and previous annual reports gone fully into the matter (to which I beg to refer), it is unnecessary to occupy space in going over the same ground. Suffice it to say that probably few of the public know anything of the above-quoted subsection 4, and it never occurred to them to apply for an oyster-grant, whereas, were stations previously surveyed and advertised to be sold at auction on a given day, many would have the enterprise to secure one. The department has in its possession a series of maps showing existing oyster beds, also localities in which new beds might be planted or set aside as Government reserves for natural propagation for a period of years—for instance, in Richmond Bay, West and Hillsborough Rivers—or when surveyed into stations to be offered at auction or agreement, to private lessees, suitable localities to begin with being Shemody and elsewhere in Richmond Bay, Charlottetown Harbour, Cardigan Bay, Cascumpec Bay. But the grants should be small.

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* Inspector J. Hunter Duvar.

"In short, there are many localities in the waters of Prince Edward Island that might be rendered valuable, not only without cost, but with a revenue to the Government.

"It is a thousand pities that immediate measures are not adopted to fully organize this most valuable industry. It is capable of vast development. The demand must always exceed the supply. Oysters are very fecund. The island is as favourably adapted for shell-fish culture as the famed English coast of Kent. Three thousand five hundred barrels of oysters per week during the season were last year shipped from the United States to England. There is no reason that with increased product Prince Edward Island should not ship likewise, and thus tap a large source of wealth."

From annual report, 1883, page 177 : *

"This province is peculiarly well adapted for the growing of oysters. The waters of half the island were once stocked with natural beds. So lately as 1832 live oysters were so plentiful that legislation had to forbid their being burned for lime. In many places the dead shells of once productive beds remain many feet in thickness. The fishery is but a mere scrap and vestige of what it once was, and might again be made.

"Oyster fishing in the province is free to all, consequently everyone makes the most of it for his own individual benefit, without care for the future. Wherever oysters happen to be a little more numerous than usual, they are immediately fished out. Thus the ground is shifted every year, to the ultimate destruction of the whole area. There is no regulation as to size, hence there is annually destroyed a quantity that I vaguely reckon at not less than 10,000 pecks, equal to 1,000,000 of shell-fish that, under due restrictions, would come to maturity. It is not too much to say that as many oysters as one-fourth of the whole consumption and export are destroyed every year by the digging of shell manure. Although even under the present careless system a sufficiency can be got to export annually 30,000 to 40,000 barrels, the best beds are being slowly but surely exterminated.

"This is an evil that is quite remediable, and by simple means. The present Fisheries Act provides the machinery. The history of oyster culture and oyster fishing in the Netherlands affords valuable hints as to details.

"The object to be aimed at is two-fold, namely, to make the most, permanently, of the present supply, and to increase that supply. To do this, requires oyster culture to be carried on along with oyster fishing.

"Natural oyster beds owe their location to accident. They are scattered patches, larger or smaller, that owe their change of locality to tides, winds or other not controllable causes. Accordingly, we find stretches of bottom quite suitable for the growth of oysters, but on which none have grown. Every spring the fishermen take soundings for the scattered beds, and when such are found, they are worked till completely cleared. It is evident that under this pernicious system, total extinction is merely a question of time.

"There are two distinct oyster fisheries requiring to be differently dealt with in this province, namely, in creeks and tidal rivers, such as Mill, West, Tryon, Enmore, Hillsborough, Johnston's Rivers, the Narrows, &c., and considerable bodies of water, such as Richmond Bay. In addition to these are localities where the fishing has been quite extinguished, but where it might be revived, as Bedeque, Winter River, and elsewhere. And finally, there is unlimited room and suitable ground for planting of new beds in many parts of Queen's and almost all the creeks and bays of King's County, where oyster beds have not yet been grown.

"To the question of how is this to be accomplished, the answer is brief : By Government regulation of private culture under section 15, subsection 4 of the Fisheries Act, and by Government aid in establishing experimental culture under section 15, subsection 5 of the same Act.

"Several applications for license to cultivate oysters have already been forwarded to the department. I have recommended that all these be granted, subject to the conditions which seem necessary for the protection of the Government, and of the public. The conditions are, that the area leased be of moderate extent, that in the first instance, the term of lease do not exceed nine years, as provided in section 2 of the Fisheries Act; that during such first term the annual rent be low, or nominal, but renewable for a further term at an enhanced rental on valuation; that within a given time a certain defined proportion of the area be planted with brood oysters, at the rate of (so many, according to each case) to the yard square; that after the lapse of three years from the date of grant not less than (a specified quantity), nor so many as would deteriorate the bed—in which, of course, the Government would retain reversionary interest—be annually fished; and that at all times said oyster farms be under the supervision of the fishery officers. On these conditions, it is believed that many leases would be taken up in creeks and estuaries, were advertisement made that the waters were thrown open to lease. A right of priority of claim, before a specified date, might be given to persons owning shore frontages. Excepting in so far as rivers may be defined under section 7, subsection 7 of the Act, I am not competent to express an opinion as to riparian claims set up on the banks of tidal water.

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*Inspector J. Hunter Duvar.

"In the greater waters such as Richmond Bay, the system might require to be modified. Here, the applications would mostly be for sites, on which workable beds are already existing. From difficulty of defining small patches of space in the bay, the area would have to be larger. Twelve acres have been found a practical size in the Zuyderzee, Holland, which, in its features, bears some resemblance to Richmond Bay. One hundred and fifty acres is the largest single area granted by the Dutch Government. A rapid increase of production has taken place in Zuyderzee, since the leased beds were withdrawn from public fishery, and there seems no reason why similar satisfactory results should not follow under like circumstances in Richmond Bay. As the bay is large, about six by ten miles, it would not likely be all applied for, and the present practice of free fishing need not be interfered with on the unleased portions. Indeed, it might be advisable to begin by offering only a limited number of leases until the success of the new system be proved, and the public mind be educated to accept it. One thing is certain—the present system is eminently wasteful and ursatisfactory. In this connection, a report, from *Warden V. S. Gillis, of Indian River*, an inlet of the bay, says: 'There have been engaged this season, regularly oyster fishing on Richmond and Malpeque, about 150 boats and 300 men, allowing two men to each boat. Each boat averaged about six barrels per day. The oysters are without any doubt a great source of wealth, and should be carefully protected. I have been speaking to several fishermen (French), and they tell me that they cleared in cash $140 per man, since 1st September to 17th November. They also say that the oysters are as plentiful and as large as they have been for the past three or four years. I have been asking them as to the size and length that should not be fished. They say that oysters less than two and one half or three inches, should not be caught, because when re-picked, these small ones are thrown away, whereas if left on the oyster bed, will, on some future day, be fit for market. I think the leasing of the oyster beds will be the means of causing a great deal of litigation between parties concerned. I think a very good way to protect the oysters would be to allow no fishing in the spring of the year, and to extend the close season till the 15th September instead of the 1st of that month as now. It will benefit the fishermen because, as it is now, they generally take up a great number of oysters during the first part of September, too many for the demand, and the consequence is that quite a lot of them get spoiled, and it keeps the price low for the rest of the season.'

"With regard to Government aid in the formation of new oyster beds under section 15, subsection 5, of the Fishery Act, although very desirable, it need not be on a large scale. The experiment would be in the light of a model farm for the instruction and initiation of the public. Two suitable localities offer, the first being the estuary of Winter reserved River, where in former times there was a great supply, and where the bottom is now paved some feet thick with dead shells. The other locality is the estuary of Cardigan River, in King's County, where the bottom is clean and suitable, no manure being dug, and no steamboat on the river. As there are at present no oysters in King's County, the planting of a bed or beds would be viewed with interest, and could not fail greatly to benefit the county. I estimate that an experimental bed, planted with 150 barrels of brood oysters, could be made at either of the above localities, on buoyed ground, properly levelled and harrowed, for the sum of $300, or less, exclusive of railway transport. A small grant of $600 would thus establish self-paying models in two different parts of the province, where oysters are not now found, and from the product of which other plantings could be made. For the first three years, until the beds become remunerative, no staff would be needed beyond the present fishery wardens. So much of the foreshore is suitable for shell-fish culture that the trouble and cost of laying off need be comparatively small. Survey of private areas would be at the expense of the applicants.

"The great drawback on the oyster-fishery of this province is the digging of oyster shells for manure, under the name of 'mussel mud.' This is a subject that will have to be faced sooner or later, and the sooner the easier. The digging of shells for calcareous manure is an important part of the industry of farmers residing not only on the shores of creeks, but within several miles of the water. It is impossible to state accurately the number of power digging machines in use every winter, but there must be many hundreds. No restriction whatever being placed on digging, the live beds are cut up at random in all directions. Oysters are protected by the fishery officers in summer, that they may be destroyed by the farmers in winter.

"The marking off a certain number of spaces in the principal oyster waters as Government reserves or leases would be the first step towards a better state of things. In this I perceive neither difficulty nor injustice. The farmers would be deprived only of the very limited spaces required for artificial culture, and might, as heretofore, continue to have free access to areas amply large enough to supply them with manure. These general views express the possibilities. Details shall be laid before the department when required.

"The oyster fishery of Prince Edward Island is of importance, greater than that of any of the other Canadian provinces. It brings, in cash, say $80,000 to $100,000 per annum, by way of export, over and above supplying local consumption. In the course of a few years it might be increased many fold and yet the privileges of the farmers remain intact.

"Prince Edward Island oysters have long maintained a good fame. The name of 'Bedque Oyster' is still used as a term of excellence, although oysters are not now fished at Bedeque. Shipments are made to the markets of St. John, Halifax, Quebec, Montreal, Toronto, Ottawa, and other cities. Two forms are found indiscriminately on the beds, namely, circular and long. It may be curious to ascertain scientifically whether these are two distinct species, the *Ostrea canadensis* and the *O. borealis*, or merely difference of form. At all events, the variation is established in their earliest growth, for the same stone, or old shell, has frequently adhering to it, young oysters of less than an inch in length with the two forms definitely developed. Both varieties are equally valued as food. Private culture would speedily prove whether the different forms could be grown separately, and which kind would be most in demand.

"It has been difficult in past years to distinguish accurately the quantities actually taken in the respective localities, inasmuch as they passed through various hands before reaching the point of shipment, and hence were apt to appear twice in the returns. In view of possible reorganization of the oyster fishery, the greatest care has been exercised in checking the exact product this year, namely, as nearly as possible, 35,000 barrels, which, at the official rate of $3 per barrel, represents an article of traffic close on $100,000 value."

From annual report, 1884, page 243 : *

"The knowledge gained by certain observations elsewhere referred to, should be of great value in laying down oyster beds, for artificial culture, in localities of the island waters wherein natural beds are not found. Our whole shore is fringed with creeks and estuaries, wherein oyster farming might be successfully and profitably carried on. The requirements of shelter, absence of excessive tide, suitable bottom, and the proper degree of salinity are everywhere.

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*Inspector J. Hunter Duvar.

"There are a few facts with reference to existing natural beds that are to be taken into account. Many parts of the bottom of creeks and estuaries are of hard 'mud' (so-called), formed by the disintegration of sandstone mixed with washings of underlying clay, until of the consistence of brick paste, with but little vegetation. No better bottom could be found for the laying down of brood. In other places are deposits of shells, where oysters once were, but are not now, which is also good bottom for planting. The main requisite for good bottom is that it shall give a foot-hold for ready attachment, and be so firm that when the oyster opens its shell no washings or impurities may flow into the animal. Hence the use of tiles in oyster culture in Europe. Broken shells and projections of clay offer, in this island, the same conditions as the artificial trays and made floors of Europe. On these ready points and projections the 'spat' or spawn, emitted from the brood oysters, catches and adheres. I do not think the spat has sufficient vitality to drift long distances. The minute young must be most delicate, much more so than the young of swimming fish. A favourite resting place of the spat is on the edge of the laminæ of old shells. There once established, the young oysters grow in clusters, to the dimensions, say, of 2 inches in length the first year. Thereafter the growth is proportionately more rapid, until at four years they are fit for market. It is a noticeable fact that all the oysters in a cluster do not grow on the same plane, with the inferior (flat) shell downwards and horizontally, but grow perpendicularly, or at all lesser angles, the arrangement evidently being that each individual oyster shall grow with reference to the others, so as to have the largest facility for opening its shell. In this circumstance is a key to the destruction. from natural causes, of self-planted oyster beds. Thus, when the oysters in a cluster come to maturity, and in due course of time themselves emit spawn, such spawn or spat is caught on the ragged points and edges of the parent shell, forming a second growth above and upon the first. The process of stratum growing on stratum, floor upon floor, goes on increasing the bed in height each year, while, at the same time, the base is being extended, until the mass becomes a mound of oysters, sometimes of large area. The inner strata of this mass, being, from the superincumbent pressure, unable to open their shells, perish from suffocation, so that the mound comes to consist of a core of dead shells, with a thin covering of live oysters on the top. Where the mound, by annual increase, grows so high as to reach the ice-line, even that thin covering of oysters is killed. Moreover, these oyster banks in the channels collect ooze, mussels and rubbish, tending still further to destroy the bed, until sooner or later it perishes. This destruction would be prevented by artificial culture in removing obstructions, raking the beds, preventing too thick a growth, and shifting the growing oysters into new water two or three times before they come to market. By such culture all waste is avoided and a much superior article produced.

"These natural causes sufficiently account for the rapid deterioration of our oyster beds without the added destruction of digging them up for farm manure. Notwithstanding these depressing agencies, 28,320 barrels were this year sent too market, mostly in Canada. It will be observed that all our oysters are what are known in Europe as 'sea oysters,' that is to say, oysters that are taken from natural beds *in situ* and which, as their shells are rough and unshapely, fetch a much less price than the oysters of cultivation, the shells of which are thinner, smoother and more symmetrical. Two forms of oysters are found growing indiscriminately on the Prince Edward Island beds, namely, the long Canadian oyster and, in a lesser proportion, oysters circular in form. I am not naturalist enough to decide whether these are different varieties or merely variations in form.

"The time seems to have come to open the oyster grounds—or a part of them—to lease, under due regulation. As matters at present stand, no one will venture the risk of artificial cultivation. The present state of the law and the custom of the country are exceedingly indefinite and unsatisfactory. It is doubtful if the law would protect private oyster beds from being robbed, under the guise of shell-digging. Hence the necessity for the area of artificial culture being secured by lease or grant, or by being set aside for the public interest. In last year's report I submitted details that, I think, would meet the case, and to which I beg to refer.

"The fishery has not been so steadily pursued this year, owing to continued bad weather, which readily agitates the shallow water in which oysters are found. A number of oyster fishers have removed from Percival Bay, which has generally given a good yield. Two hundred boats were regularly employed oyster fishing on Richmond Bay. Twenty-four barrels are reported from St. Peter's, a new locality."

From annual report, 1885, page 257 : *

"In previous reports I have solicited the consideration of the department to the unsatisfactory condition of the oyster fishing in this province. The experience of the present year shows an increase of the evils complained of. More men are engaged in fishing, and as the demand is at least equal to the supply, increased exertions have been put forth. Small beds hitherto neglected have been sought out and fished bare. Persons not connected with fishing have gone into the speculation of shipping, and it may be said the industry this year has reached its utmost limit. Over-production threatens the oyster fishery, and with the same result as in lobster canning.

"Following the lead of parties in New Brunswick, who are said to have shipped large quantities from Bay du Vin, and elsewhere, a movement has been made in the shipment of oysters in the shell to London, England, by steamers. If this enterprise be successful it will be attended with weighty consequences to the island fishery. The oysters are put up in boxes containing about one-third of a barrel for retail. The movement has been inaugurated by persons in the dry goods trade, but if it prove a commercial success, it will be followed by a host of imitators, all drawing their supplies, without restriction, from the best beds they can find. The present would seem a favourable opportunity to regulate the size and quality of oysters that may be legally exported before the speculation becomes too large to admit of such. A demand for the English market would let loose still more fishers at random on the beds and still more rapidly fish them out. According to recent advertisements, London fishmongers offer to sell packages of oysters, carriage free, at prices varying from 18s. per 100 for Whitstables to 6s. 6d. per 100 for Anglo- Portugo. Supplies from Prince Edward Island would probably rank with Portuguese, or a little higher, but even at such price would leave a margin for profit, and it would be well to regulate the catch now in view of a probable English traffic.

"As was not unnatural, extension of the close season did not meet with the approval of fishermen whose interest it was to have as long a season as possible in which to dig and sell to the shippers. They looked at it merely in the light of fourteen days knocked off their earnings. A newspaper even spoke of it as 'an encroachment on fishermen's rights.' Such a view may at once be set aside. The 'rights' of fishermen are the right to make legitimate use of fishing facilities without undue interference with the rights of others, whether those others be of the present time or coming afterwards. What limitation the exercise of such right may call for to render any fishery permanent for the benefit of the future, as well as of the present, is within the duty and discretion of the Government. Canadians of the future, as well as of the present, have the 'right' that the fisheries should be preserved from the avarice of the moment.

"I gather that the intelligent public in general regard the shortening of the fishing season favourably, and many believe that a still longer extension of close time would be judicious.

"There are not wanting persons in the trade who maintain that the industry requires no regulation, and that any interference with it would be tyrannical. Communications have been sent to the press that the beds, merely by being stirred in fishing, are benefited and extends their area, by its answering the same purpose as the 'raking' of artificial culture. This statement, on which the advocates of the present state of things lay so much stress—that the beds prosper all the better for raking (*i.e.*, fishing)—is one of those half-truths that deceive more readily than absolute falsehood. The raking the beds receive in indiscriminate fishing is not of the right kind. Every one who has watched oyster-tonging must have observed that the process is a mere stirring up of the mud, and not raking at all in the true sense of separating the clustering oysters and giving them room to breathe. So far from assisting to provide a supply of clean shells to which oyster spat may cling, the settlement of the stirred-up soil covers the full-grown shell with a deposit of slime, on which it is impossible for the almost microscopic spawn to take hold and live. The 'raking' of beds periodically is a process of considerable skill in artificial culture, and is impossible on beds free to be fished by all comers.

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* Inspector J. Hunter Duvar.

"Several suggestions have been made to me respecting the nomination of oyster inspectors to see that all undersized oysters are returned to the water, and the newspapers announced, prematurely, that I had applied to the Minister for the appointment of such officers. This is a matter that requires consideration. While it is beyond question that all oysters under given dimensions should be returned to the water it is extremely doubtful if the appointment of special officers, charged to see to that duty, would be effective in having it carried out. In the first place, it would take at least half a dozen inspectors to oversee Richmond Bay alone, where 300 boats fish and land their catch at different points. That part of the bay on which natural oyster beds are found extends over an area of about six to seven miles from east to west and four miles from north to south. Grand River, the Narrows, Lot Eleven, Cascumpec, Pownall Bay, Orwell, West River and other localities where oysters are fished, would demand similar officers. Such officers must either be attached to the general fishery staff under the general inspector of fisheries or be distinct from it, and in either case they would come in contact with the duties of the regular fishery wardens. The expense would be more than the proportionate value of the fishery would bear, inasmuch as wages, better than could be elsewhere obtained, would be required to secure the whole time and services of suitable men, whose duty would require them to be about all the time, from early daylight till late at night in order to do any good. At present there is no order defining the size of shell under which oysters are illegal. Having given the subject due consideration, I am inclined to think that a stringent regulation, bringing the matter within the jurisdiction of the ordinary fishery wardens by defining the dimensions of oysters under which size possession shall be illegal, and the appointment of two additional wardens for Richmond Bay, provided with suitable boats (which could be provided, all found, for not exceeding $37 each) would, for the time being, answer the purpose and be as much as the present state of the industry would justify. As the oysters are landed at many points along the bay a boat for each of the two wardens is indispensable, as it would be impracticable to visit all the landing places on foot. Were such official boat seen afloat it would soon educate the fishermen into what is required of them. At the same time, I would urgently point out that the proposed wardens should be persons living on the shore within sight of their work, the one on the south side, at or near Shemody, and the other at or near Oyster Cove, on the north side, these being the two chief points from which poachers issue to fish oysters during the close season. Unless the wardens have at all times the expanse of the bay before them, visible from their own doors, so as to see at once, and follow, boats out in the close time, I should consider the salaries paid them as thrown away. Such wardens might make it a special point of their duty to see that oysters are not fished illegaly in the close season and hidden in *caches* in the bay to rush for shipment on the first day of opening. This year fishing began on Tuesday midnight; on Wednesday 600 barrels were on the market—an impossibility by legitimate fishing. But I would express a very decided opinion that the appointment of special inspectors, charged solely with the business of seeing that small oysters are not landed, would, in working, be found cumbrous, ineffective and largely expensive.

"It has been brought to my notice that shipments to Montreal and elsewhere frequently arrive in inferior or bad condition, especially in the early part of the season, and it has been asked whether the fishery officers cannot interfere to prevent such shipments. To my mind this is quite beyond their purview. Fish in the sea, or in process of being taken, are fish under the regulations of the Fisheries Act. When legitimately landed and ashore they become "goods" subject to the usual chances of commerce.

"On the subject of our island oyster beds, a St. John, N.B., paper has the following pertinent remarks:—'The chief source of St. John's oyster supply is the oyster beds of Prince Edward Island. Formerly many of the oysters used in St. John came from Shediac and other points along the north shore. Latterly these beds, which were all natural formations, have been exhausted by continual and indiscriminate raking, leaving only those of Prince Edward Island from which to draw the local supply. If some kind of protection is not applied soon these, too, will share the fate of Shediac, Buctouche and other exhausted localities, and oyster fishing in the maritime provinces will be a thing of the past.'

"Notwithstanding the truth of the above observations, it is not meant to be implied that the Prince Edward Island beds are already fished out, for two to four barrels of oysters per man still reward the fishers on Richmond Bay, and the total catch (for home and shipments) of perhaps 40,000 barrels is a contribution of some magnitude to the resources of this small province. But the very fact that good wages can yet be made, and the active speculation that has set in, and will certainly yet further set in, renders the rapid impoverishment of the beds the more certain. For no uninterested person, conversant with the market, will deny that while the fishery is only kept up to the mark by extra force, the demand is increasing instead of falling off. The result must necessarily be overstimulation. New adventurers are, and will be, attracted into the field, regardless of the future of the fishery so that present ends be served. The question for consideration is therefore two-fold; firstly, how to husband the existing supply, and secondly, how to provide a future supply.

"With reference to the first of these, things can be done in Europe that could not be attempted in free Canada. Nor is it desirable they should. The French coast-prefects are said to assign the tale of oysters that may be taken by each boat, and the same is done by some of the English oyster guilds. This being here impracticable, there only remains to husband the supply by shortening the fishing season.

"Although oysters may legally be fished in Canada for eight months and a half of the year, nature practically limits the fishing time to three months and a half. This embraces two distinct periods, namely, spring, up to 1st June, four to six weeks, or thirty-six working days, and fall, after 15th September, about eleven weeks, or sixty-six working days, the latter being the main working season. An expert has given an estimate, that in the fall fishery Richmond Bay alone produces a thousand barrels each clear working day, but this I regard as considerably over the mark. Were it decided to shorten the time of fishing, it must come off one or other of these two periods, the spring or fall fishery.

"Against wholly prohibiting spring fishing, it is urged that customers look with avidity for the first supplies, that oysters cannot be kept over winter to meet the spring demand, and that it would deprive farmers along the bay of a source of income that is now available, before they settle down to farm work. *Per contra* it is stated that abolishing spring fishing would affect fewer persons injuriously than shortening the time in fall would. According to the limited amount of information at present known, the question of spawning does not enter into consideration. It is merely a question of supply. The matter is remitted for consideration of the department. It is safe to prophesy that whatever course may be adopted, any change in present arrangements (or rather absence of arrangement), will meet with opposition from fishers engaged in the actual work of catching, and most likely from some of the speculative shippers. The very quantity taken this year, in fourteen days shorter time, is certainly not an argument in favour of a lengthened fishing time. On the contrary, it indicates that in a shortened season enough can be taken for the good of the beds.

"Summerside being by far the largest port of shipment, it may be taken as a criterion of the trade. From the following table of shipments thence, it will be seen that the export in the first month and last month of the season was comparatively trifling, so much so that both these months might be struck off the legal fishing without any marked effect on the general business. Families, however, lay in their supplies as late as possible for winter, so that the latter half of November could not conveniently be dispensed with.

	Barrels.
"Spring fishing—Oysters shipped from Summerside from opening of navigation to 1st June	764
"Fall fishing—1st to 30th September	5,449
1st to 31st October	6,968
1st to 30th November	4,800
1st December and later	104

"May and December stricken off would, therefore, but slightly affect the aggregate supply—at present.

"As regards the extension of supply under private care and by artificial culture, I can only repeat what is set forth in Prince Edward Island annual fisheries reports for 1884 and previously, and to which I beg respectfully to refer. The points therein indicated are:

"1. The laying off and offering at auction or otherwise the lease of defined areas of oyster bottom of moderate extent, at a small upset price for a short term of years, subject to the condition of planting and afterwards of fishing, subject to regulation, leases being renewable for a further term at valuation, Government retaining a reversionary interest in the same. Several applications for lease are already on file with the department.

"2. The placing in the estimates a moderate sum, under section 15, subsection 5, of the Act, say $1,000, to aid in the planting of beds in new localities.

"3. To which was added, supplementary, the establishment of one or more Government oyster stations or farms, which should be self-supporting, as a source from which young oysters for planting might be drawn. This suggestion, however, is not of immediate necessity, and, with Nos. 1 and 2 (as above) in operation, might not be needed.

"Unlike some other enterprises, the time required to test, or rather to prove, the success of oyster culture, is very short. The large quantity of undersized oysters, now wasted and a nuisance, would become a marketable commodity and be utilized in planting new beds. In four years, oysters grown from such seed might be placed on the market of (second) merchantable size. In five or six years they would be full grown and have reproduced. On the other hand, there is every appearance, that in three or four years more of the present unregulated fishing, the estuaries will have been swept bare, and evil effects be felt even over the extensive area of Richmond Bay. In all the oyster fisheries on the coast of the United States the beds are carefully protected. Here every fisherman fishes wherever he has a mind, until he demolishes the beds, and the areas are torn up every winter by mud machines. This is a state of things that is surely not beyond remedy.

"Popular objections are occasionally brought forward questioning the power of the Government to lease the Prince Edward Island oyster grounds. The circumstances of the oyster fishery in this province are these: 1. Oysters are taken only in tidal salt-water, navigable for boats and small vessels, say two to eight fathoms, and such tidal water is not included in land grants. 2. The local Government exercised the power of leasing oyster beds and areas (making no mention of riparian or littoral claims, hence it may be assumed there were none); but by enactment, manure diggers may dig on all areas, 'even although some of the oysters or oyster brood should be thereby unavoidably taken, removed or disturbed.' The popular reading of the clause is, that all the beds may be dug over, even if it destroys all the oysters.

"WHAT IS WANTED.

"Stringent regulations to prevent the oyster fishery from being destroyed by promiscuous overfishing.

From annual report, 1886, page 181: *

"Last year the number of boats engaged in oyster fishing in Richmond Bay alone was estimated at 300; this year, 500. Persons flock from all parts of the country to this fishery, the work, besides requiring no outfit, being comparatively easy, and, at least for part of the season, paying well. It is no uncommon day's work to average two or three barrels per man. The fishery opened at daylight on 16th September, and on 17th nearly 800 barrels from Richmond Bay were delivered to the dealers in Summerside. The first day's shipment by steamer included 440 barrels to Quebec and 236 to Montreal, some eighty barrels of which were sent by express to Quebec, thereby anticipating the market by twenty-four hours. During the season some orders were filled from Chicago and Milwaukee, thus opening up a market that is new. As elsewhere stated, the catch of this year exceeds that of last by nearly 5,000 barrels.

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* Inspector J. Hunter Duvar.

"It is common to hear the assertion that the beds are not falling off, but that they increase in production the more they are raked, there is no doubt the fishery is carried on in a wasteful manner, especially by the destruction of small oysters. It is true, that in the past year more of the bivalves have been taken, but it must be remembered that many more fishermen were after them. The preservation of young oysters not yet old enough to spawn forms an important subject of attention in the oyster culture of both continents. The destruction of these year-old shells is a heedlessness—call it a crime—for which there is no necessity, and from which no benefit of any kind is derived. They are not marketable in any way. The remedy, too, is simple. Cause the oysters to be culled in the boats, and make possession of small oysters on land—say two and a half inches or less in greatest length—punishable by fine, whether in the hands of fishermen or on the premises of dealers. An Order in Council would effect this, and it is perhaps the only new regulation at present called for as regards the Prince Edward Island public oyster fishery, excepting that it is a matter worthy of consideration whether every boat engaged in the oyster fishing should not be required to take out an annual license for that purpose. Individual offenders against the law are not easily identified, and it would much strengthen the hands of the fishery officers could the boat license be called for. The license need not be oppressive—say, one dollar—and, to save trouble to the department, might be issued by the inspector. It is a matter of registration, not of revenue.

"With reference to the protection of the beds during the summer months, it is certain that so long as the public persist in eating oysters in the close season, so long will the restaurants continue to supply them. With some degree of caution supplies may be bought from poachers all summer, and the oysters be safely dumped after nightfall into cellars, from which it requires a regular information and a search warrant to extract them. Hitherto, the protective force has not been strong enough to grapple with this abuse, but the recent appointment of wardens at West River and Pownal Bay, in Queen's County, and Richmond Bay, in Prince, should go far to check the illegal sources of restaurant supply. The special duty of the new warden (Ramsay) on south side of Richmond Bay is to be afloat during the close season with sufficient witness to identify offenders. One more warden with like duties afloat on the north side of the bay, and with residence at 'the old store,' is required to complete the water patrol, and I would urge that such warden be appointed on the same terms as Warden Ramsay.

"From the deposits of shells on dead oyster ledges in many parts of the province, it is evident that extensive stores of oysters were found in localities where none are now. These could easily be revived at little expense. The main fishery is in Prince County; Queen's County still has valuable beds; King's County has none, yet King's seems entitled to share in so valuable a resource. I would, therefore, venture respectfully to recommend that a sum of, say, $1,000 be placed in the estimates for the planting of oyster beds in King's County, and in such other localities as the amount of appropriation might cover, under section 15, subsection 5, of the Fisheries Act. Such planted beds would be Government property for the supply of stock for private artificial culture, and in the course of not more than three or four years should become self-supporting, which brings me to the subject of private culture, under section 15, subsection 4 of the Act.

"The area of ground in the 'creeks' and sheltered bays of this island eminently adapted for oyster culture is very large. In some instances, suitable ground is covered by land titles, and I have reason to believe that were areas protected for oyster breeding, many sites would be taken up. It is unnecessary in this report to go into details of regulation or management, but I am prepared to furnish a practical and inexpensive scheme, should such be required by the department. Here, likewise (as in the case of licensing oyster boats), it would not, for the first three or four years, be a question of revenue, for the reason that even the best practices of the oyster culture of Europe and of the middle United States would have to be modified by experiment to suit the Canadian climate. Meantime, so much oyster ground lying idle is a waste of national resource. Indeed, an oyster fishery well developed is of much higher importance than a mere supply of bivalves. The oyster industry of the State of New York, for instance, gives employment to 50,000 men."

From annual report, 1887, page 173 : *

"The only regulation in this province is a close season from 1st June to 15th September, inclusive, thus not preventing winter fishing through the ice, by which vast quantities of young oysters are frozen and perish. Nothing prevents the fishing and loading of unmarketable oysters two or three inches in length. Vast quantities of these, the future brood, are brought up by the fishing tongs, and go to swell the nuisance heaps in the yards of packers. Such reckless waste by fishermen should be punished by fine. I have reason to know that the principal shippers are agreed that a restriction should be put on such waste. A fishery warden with a boat was placed on Richmond Bay last year with good effect during the close season. Another warden, also with a boat, is urgently needed on the other side of the bay to co-operate with Warden Ramsay. The Richmond Bay, the principal seat of the fishery, paved with oyster beds, is six or seven miles in length and cannot be effectually watched by one warden.

"Oyster fishing in Prince Edward Island is of two kinds, bay fishing and fishing in creeks and estuaries. These require to be differently dealt with, but in both the principle is the same, namely, to protect the young and to see that the close season is strictly observed.

"In view of the report of the commissioners on shell-fisheries, it would be out of place here to discuss the abstract question of oyster fishing. The points that are at present glaringly wanted are to define the limits of beds reserved for the public, to specify under what regulations they shall be fished, to prevent the destruction of small oysters, to prohibit winter fishing, and to open a liberal system of encouragement to private oyster culture. All of which amendments may be hoped for in the future."

From annual report, 1888, page 127 : *

"Oyster fishing was prosecuted with vigour. According to a proverb among fishermen that a dry summer produces good oysters, the quality has been superior. The market runs in commercial grooves, the shippers supplying the same customers year after year, chiefly in the upper provinces ; but were increase of production to take place, new markets would open, the oyster being one of the few articles whereof the supply rarely equals the demand. In 1886 were produced 33,125 barrels ; in 1887, say 36,448 barrels, and this year 35,861 barrels. To this add 2,000 barrels used in home consumption. The catch would have been larger but for unsettled weather.

"In accordance with directions from the department, extra care was this year taken to prevent the shipment of oysters in advance of the legal day. Efforts were successful in checking it, but, as usual, an immense rush was made in the earliest days of the season. The first shipment, 440 barrels, was made from Summerside on 18th September, and 1,000 barrels more before the week was out. One consignment of ten barrels was expressed to Quebec on the first legal day to head the market, at an expense of $25 freightage.

"Canada is perhaps the only civilized country in which the oyster fishery, as a national resource, is not carefully developed. The State of New York has just completed a 3-years' survey of its oyster beds, under the able superintendence of Mr. Eugene G. Blackford. Connecticut has made an exhaustive survey and issued easy and practical regulations for private culture. Delaware, Virginia, and other States, have comprehensive rules. What has been done in France, the Netherlands, Britain, and, in a lesser degree, in Germany, need not be here mentioned. Suffice it to say that in all the countries named, the Government can lay its hand on any spot of ground suitable for oyster culture, and the public are encouraged to develop the oyster industry both by public and private culture. In Canada it is not so. In Australia oyster planting is being attended to. An English company, crowded for room at home, has even leased the Bay of Aboukir, in Egypt, for a like purpose.

Canada possesses oyster waters quite as extensive as the State of New York. Those New York waters give 7,000 oystermen a permanent living, and a capital of $6,000,000 is invested in culture therein. In the whole of Canada no one man makes his whole living from oysters, but less than 1,000 men give themselves occasional employment in oyster catching, in a perfunctory kind of way, and the total annual product, at $3 per barrel, is no more than $187,580, of which Prince Edward Island provides $109,324.

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*Inspector J. Hunter Duvar.

"The points designated as the duty of Mr. Blackford, the New York superintendent of oyster culture, were, first, to survey the oyster territory of the State ; second, to designate and set apart the natural beds of oysters ; third, to ascertain the owners and condition of all artificially planted beds; and fourth, to survey and definitely locate artificial beds. These are the identical points that Canada, sooner or later, will have to attend to. I venture to offer these suggestions for the reason that Prince Edward Island contributes considerably more than one-half of the entire Canadian catch, and hence has an interest in the development of our oyster resources larger than any other province.

"That the oyster fishing in Prince Edward Island is in a deplorable state—overfished in places, and in other places not producing enough—there is no doubt. There are no regulations whatsoever, excepting a close season from 1st June to 15th September, to prevent the ultimate ruin of the beds, as they are open to be fished by everybody, and private culture has not been encouraged. Reckless fishing and continued shell digging threaten a ruin to the oyster fishery similar to that which, from overfishing, has befallen the lobster industry. With the present demand, new adventurers from distant parts of the province and even from the mainland, are crowding to the beds and carrying off large quantities, not included in official returns. For instance, fifteen schooners from Nova Scotia, bringing their own men, made descents on Orwell Bay this year and last, leaving the beds nearly exhausted. Finding it pay, others will flock in, regardless of the future of the fishery. It is time such profligate misuse of public resources should be checked.

"Scientists believe that, quite apart from overfishing the oyster beds in the Gulf of St. Lawrence are perishing from natural causes, chiefly geological, and that, as these causes continue, the mollusca in the Gulf will become extinct. In this view I agree. It accounts for the vast deposits of oyster shells, sometimes many feet in depth, found today where no live oysters are. The process of dying out is very slow, but none the less sure. No more forcible argument could be found in favour of artificial planting and culture. Every natural oyster bed perishes, after a lapse of time, from the necessities of its own growth, its increases in height and diameter, the oysters in the interior of the mass are deprived of air, and are smothered. When the bed reaches the ice level, the top perishes from cold, so that, practically, a natural bed of even moderate size, is merely a core of dead shells with a thin layer of live oysters outside. The reproduction of an oyster bed is by throwing off glutinous spat in an ever increasing radius, but it is apparent that unless the ground around such bed is clean and of sufficient consistency, the spat perishes and the bed becomes extinct. Such conditions of oyster life cannot exist where the ground is cut up by trenches and filled with the slime of mud digging.

"Nevertheless, the machinery for a complete organization of this most important fishery is ready to the hand of the department. All that is wanted is : 1. To reserve certain natural beds for fishing by the public ; 2. To offer liberal encouragement for full development of the fishery under private culture ; 3. It might not be necessary, but power is provided for Government to plant new beds and replant old ones ; all which machinery to be operated, of course, under competent supervision. Several applications have already been made for leases for culture, which are on file in the department.

"Natural oyster beds owe their location to the chances of accident, especially of tides. Spat is carried to a distance and there deposited. Consequently large stretches of suitable bottom may be passed over by the mere turns of chance. It is these suitable blank locations that private culture is intended to utilize.

"The breeding of oysters artificially is one of the recognized industries of the age. Astonishing results have been attained in the hands of private culturists. The capital required is comparatively small, the time of expectancy is short, and the crop in three or four years is as sure as anything can be that depends on the elements. I do not see any necessity for jealousy between the fishers of public beds and private planters. Such has not arisen in other countries, and there is in reality little room for a collision of interests.

"The revival of the oyster fishery does not offer the same difficulties that are met with in other fisheries. It resembles more an agricultural process ; the seed is sown on a prepared soil, the crop is attended to and cultivated when growing, and in four years the harvest is reaped. The oyster plant is perennial, and lives to a great age. I have before me an oyster shell from Curtain Island, Hillsborough Bay, ten inches in length, and showing over forty annual layers of shell. Once established by artificial culture, the supply might be made practically inexhaustible, inasmuch as oyster enemies, especially starfish, are comparatively few in these waters. Oysters in Prince Edward Island are taken only in shallow bays or in the tidal creeks from one to six fathoms, and such tidal water is not included in land grants, and hence under the jurisdiction of the Crown. In the present unsettled state of the fishery no one will risk the planting of private beds, as it is doubtful if either the law or custom of the country would protect them.

"The leasing of areas for private culture would be a check, however imperfect, to the extinction of natural beds from natural causes, for the reason that they would throw off their surplus of free floating spawn and thereby make the natural beds more likely to be impregnated. The first part of lessees' enterprise in artificial culture would be to level the ground and have it paved with materials that would catch a considerable share of the floating spawn. Were it further made imperative that no shell digging be allowed within a given distance of surveyed and officially recognized beds, the evil would be curtailed as far as it is possible to be. Other advantages to the public beds from the establishment of private culture will present themselves on consideration.

"In this province the requirements for successful oyster culture, namely, sheltered bays and estuaries with sound bottom and the suitable degree of salinity, are everywhere in the three counties, and oysters could be readily planted. Cardigan Bay, King's County, and the estuary of Winter River. Queen's County, are especially well adapted for plantations. Some few favoured localities are as favourable for culture—if planted with proper seed—as the far-famed English coast of Kent.

"In regard to further extending the close season, the following figures may be of use. Summerside is the main port of shipment, sending away two-thirds of the entire catch, but from other ports shipments are also made to the markets of St. John, N.B., Quebec, Montreal, and other places, chiefly in the upper provinces. Supposing the fishermen get to work from 5th to 15th May, they can meet the spring demand, at a high price, say 1,000 barrels. Epicures would perhaps suffer more than the fishermen were spring fishing stopped. From 15th September, when the fishery re-opens, to 30th September, about 8,000 barrels are shipped. In October, say 13,000 ; in November the same, November being the month in which supplies are laid in for winter. To cut off November would therefore be inconvenient, commercially. In December a few hundred barrels will cover shipments. According to appearance, the fishery had best be amended by strict regulation during the fishing season, rather than by shortening the time of fishing. It is, however, a matter for further consideration.

"Other items present themselves in connection with the public fishing. Such are more clearly defined duties for the wardens ; a definite legal size of oyster ; the absolute prohibition of fishing through the ice ; the licensing of oyster boats ; the selection of certain landing places on bays, where only oysters may be brought ashore, so as to bring them under the supervision of the wardens, and, generally, a uniform superintendence of the fishery."

From annual report, 1889, page 152 : *

"This fishery shows an increase of 5,396 barrels, the total production for the year being 41,257 barrels, as compared with 35,861 barrels in 1888. Warm weather at the beginning of the fishing season somewhat retarded operations for a while, and some of the shipments reached the markets in bad order, causing prices to rule low. October and November, however, were favourable months, and business was more satisfactory. A mild winter and a dry summer were favourable to the growth of the oyster, and beds that have been raked season after season produced the usual quantity. Richmond Bay continues to supply the bulk of the oysters exported, but large quantities were also shipped from the Narrows, Grand River and other places in Prince County. That the oyster fishing of this province can continue for many years to yield the large quantity now taken from it annually is improbable. There is also the possibility of a still larger quantity being required from it in the future. For some years past the supply has been about equal to the demand, a glut in the market only occurring when a protracted period of warm weather forced the shippers to sell their product at any price they could obtain. With the growth of population in the cities and towns of the western provinces it is evident that an increased demand will be created and the fishery will be required to produce a larger supply. The beds in Queen's County are now greatly overfished, and unless proper care is taken the Prince County beds may soon be in the same condition. The protection given by the present close season, while fairly satisfactory, is not sufficient. Large quantities of small oysters are landed during the fishing season, and as they are unfit for shipment, and cannot be utilized in any way, are allowed to rot in heaps, where culled. Action should be taken to prevent this reckless waste, and prohibit the landing of small oysters.

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* Inspector E. Hackett.

" In the interest of the fishery, winter fishing should be prohibited also. Fishing oysters in winter, while of advantage to a few fishermen, is most destructive to the beds, and some of the best beds in the rivers of Queen's County have been ruined by it, To preserve the beds at Orwell, York River, and West River, in Queen's County, decisive action is necessary ; and the question of totally closing the fishery on them for a term of years is deserving of serious consideration. Oyster culture might be carried on to great advantage in this province, the numerous rivers and bays of the island being specially adapted for that industry. Large areas, now vacant, could be utilized for the growing of oysters, and, if surveyed and offered on lease, under proper and reasonable restriction would, no doubt, be readily taken up. The system of leasing grounds for the cultivation of oysters in the States of Connecticut, Rhode Island, &c., has resulted in a marvellous expansion of the industry, and it would seem as if the time had arrived when a similar policy should be adopted in Canada. The natural beds should be properly protected, and the control of them retained by the department to be used as a public fishery."

From annual report, 1890, page 106 : *

" Oysters show a decrease of 6,054 barrels, the total production for the year being 35,203 barrels, against 41,257 barrels in 1889. The unusually stormy season caused much loss of time in the months of October and November, thereby reducing the output. The cool season, however, favoured shipments, the products reaching the markets in good order and realizing the highest prices obtained for many years. This industry runs pretty much on the same lines each year. The shippers here supply the same customers from year to year, the product being chiefly sold in the provinces of Quebec and Ontario. The principal fishery is carried on at Richmond Bay, Prince County. The beds of this bay are extremely productive, and although continually raked for years, show no signs of exhaustion, the product in this season, both in quantity and quality being equal to any former one. The Grand River beds have also produced well this year, and are reported as being in good condition. At the Narrows, however, there is some complaint that the size is decreasing, indicating that the beds are being overfished. The beds in the rivers of Queen's County are becoming less productive each year, and are now fished principally for home consumption. To preserve these beds, drastic measures will be necessary, and it appears to me that nothing short of closing the fishery for a number of years will have the effect of restoring them. The only regulation in force in this province at present is a close season, extending from the 1st of June to the 15th of September, in each year. This regulation, while no doubt of great benefit as a protective measure, cannot be considered sufficient to preserve the beds. There should also be a regulation fixing a minimum size, under which no oysters should be landed. At present, large quantities of immature oysters are brought to the shore by fishermen, and as shippers will not buy them, are left in heaps to rot. Such reckless waste should not be allowed. The same may be said with regard to fishing through the ice in winter. This mode of fishing is now largely carried on, and where prosecuted must result in the destruction of the beds. The fisherman, by cutting a suitable hole in the ice, immediately over an oyster bed, and using a single long-handled rake or drag, is enabled to raise and deposit on the ice, large quantities of oysters of all sizes, together with mud, &c., from the bed. After selecting all that are marketable, the others are left to freeze and die. This may not be considered any more objectionable than landing immature oysters in the fishing season and allowing them to rot, but the greatest injury is caused by the dead oysters, mud, &c., falling back on the bed when the ice melts in the spring, thus smothering any live oysters which may have escaped the fisherman's drag, and utterly destroying the bed. I would earnestly recommend that a regulation prohibiting the fishing of oysters through the ice be adopted as soon as possible.

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*Inspector E. Hackett.

"Oyster culture is now extensively carried on in several of the neighbouring States, as well as in the principal countries of Europe. Oyster farming in those places has become an established industry, the seed being planted and the crop raised with the same regularity, and with as great chances of success as attends farming on the land. The oyster being enormously fecund, increases very rapidly; the spat is sent out by the half million, and if the conditions be favourable, matures very quickly. The bays and estuaries of this province afford ample opportunities to the enterprising private culturist who may desire to embark in oyster farming; and as the natural beds cannot be expected to always yield the necessary supply, this branch of industry would, in a few years, become profitable. Definite action with regard to this important matter should be taken at an early day. A system that has produced such marvellous results in other countries should succeed here, and would, if adopted, eventually prove a source of great national wealth."

From annual report, 1891, page 98 :*

"Oysters show an increase of 5,827 barrels over last year. This fishery was vigorously prosecuted and proved very successful. Stormy weather about the last of October prevented fishing for awhile, but this had the effect of increasing the demand and raising prices, thus eventually benefiting the fishermen. The oyster fishery has exhibited no change for some years past, the beds in Richmond Bay, Grand River and the Narrows yielding the usual quantity, although incessantly raked during the fishing season. The product is sold in the other provinces of Canada, chiefly in Ontario and Quebec.

"Fishing through the ice is becoming an established industry here, and if allowed to continue, will result in great injury to the fishery. This practice has only been introduced within the last few years, and its bad effects are not yet apparent. There is a strong feeling against this mode of fishing entertained by those who are interested in the preservation of the beds.

"*Mr. Venantius S. Gillis*, one of the most intelligent guardians on Richmond Bay, writing me a few days ago on this subject, states:

"'I have also to state that as soon as the ice on Richmond Bay was strong enough to bear a person, there were several crowds out oyster fishing.

"'The method used in winter fishing destroys the ground, so far as oysters are concerned, for a great many years, if not forever. They use a machine like a common hand rake with curved iron teeth in the head and with a handle about forty feet long. With this they scrape the bottom in a circle all around the hole cut in the ice, bring mud, oysters, &c., in a heap directly under the opening, and then fish the oysters up with the common tongs or rakes. To tear up the bottom in this way destroys the oysters. The oyster grounds should be rigidly protected, as the oysters are a large revenue to poor people and others. The season for fishing is too long and will in a very few years exhaust the beds by overfishing. The only way I can see that they can be saved is to stop the winter fishing and extend the close season until the 1st of October in each year. I have been speaking to several of the fishermen and they concur in the same idea.'

"In addition to the destruction complained of by Mr. Gillis, large quantities of immature oysters are destroyed each year. These small oysters are landed by the fishermen and, being unfit for export, are rejected by the buyers and thrown in heaps to rot. I would earnestly recommend that a regulation be adopted by the department, fixing a minimum size, under which no oysters should be landed, also one prohibiting winter fishing.

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*Inspector E. Hackett.

"Several of the foreshores on the bays and rivers of this province, where oysters at one time existed, but where no public fishery is now carried on, might be utilized for cultivation. The department has lately adopted the system of leasing or licensing those blank spaces to private parties for purposes of oyster culture, and it is probable that numerous applications will be made for areas of this kind.

The proper protection of the beds in the close season is attended with considerably difficulty. There is always a demand at the saloons for oysters during the summer months, and unprincipled parties make great efforts to supply them. They generally repair to the beds in the night time and, after securing sufficient to meet the demand, convey them to the parties in small cans. This practice has been found very difficult to prevent, and may be carried on in the immediate vicinity of the guardian's residence. The beds, however, were fairly well protected last season, and while a little of this smuggling may have been done, open poaching was not allowed."

From annual report, 1892, page 92 : *

"Oysters show a decrease of about 8,000 barrels. Owing to windy weather in September, the catch was not so large the first part of the season as in 1891. This had the effect, however, of raising prices later in the year, and the men engaged in the industry were well satisfied with the result of the season's operations. Richmond Bay is the best oyster ground in the province, and although continuously and incessantly raked, still produces large quantities of this excellent bivalve. The bottom of this bay appears to be covered with oysters, and the men are each year discovering large and productive beds. which they assert have never before been worked upon.

"In this way new ground is being opened up, and the danger of exhaustion by overfishing is not so great as in the smaller bays and rivers. The number of boats and men employed is, however, increasing from year to year, while the output remains about the same.

"This would indicate that the supply is kept down to a very low point, and unless nature is assisted in some way may ultimately fail.

"The small shallow streams have certainly suffered from overfishing, and in many of them the industry has ceased to be remunerative. The mud diggers have been largely used in the vicinity of living beds, and have without doubt caused great injury to the growing oysters. Another practice that should be prevented is the landing of young oysters by the fishermen during the season. These immature oysters, being too small for export, are rejected by the buyers and thrown out to rot.

"Hundreds of barrels are wasted and destroyed in this way each season, which, if returned to the beds, would mean thousands of barrels of the best oysters another year.

"Stringent regulations prohibiting the use of mud-digging machines within a certain well-defined distance of a living oyster bed, and compelling fishermen to return all small oysters to the water, should be adopted by the department with as little delay as possible."

NOVA SCOTIA.

In the year 1868, Mr. Rogers, inspector of Nova Scotia, reports as follows (page 25) :—

"I am informed that the local Government of this province (upon what authority I cannot say), granted a lease of certain oyster beds in Malagash Harbour to Alexander Macfarlane, Esq., of Wallace, for the purpose of cultivating oysters. The inhabitants generally are very much opposed to any such grant, as the mussel beds, and the mud on the flats is invaluable for manure, and the granting of these privileges to Mr. Macfarlane has entirely deprived them of its use.

"I am not prepared at present to say whether the right to cultivate oysters may not be held by private individuals without interfering with the manure referred to.

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*Inspector E. Hackett.

When the ice goes out in the spring I will be able to judge better. It is a matter of considerable importance and very desirable to encourage, as far as possible, private enterprise in this as well as many other branches of our invaluable fisheries, and I have no doubt that oysters may be profitably cultivated, not only at Malagash, but Wallace, Tatamagouche and Pugwash as well, and I hope the day is not distant when private enterprise will develop this branch of our natural resources, to the advantage of the province, as well as to all concerned."

From annual report, 1879, page 154 : *

" Oysters do not figure largely in the general produce of our fisheries, and unless they are afforded better protection from indiscriminate destruction than the present law provides, we shall very soon have none to report. There are tens of thousands of acres of waters along the estuaries and bays, around the Straits of Northumberland, particularly, where these fish could be cultivated in great abundance, and at small cost. It is surprising that some enterprising persons do not take hold of this business. Our American neighbours are doing a very large business in this line, amounting to many millions of dollars annually. We have every facility for their cultivation, and a ready market at remunerative prices. Information on the subject among the people is much needed, and I intend in future to turn my attention more to this matter, and, if possible, induce some enterprising persons to embark in the business ; others will soon follow, no doubt, as very little capital is required, and the profits are large."

From annual report, 1885, page 86 : *

" Oysters are found to some extent in many parts of Nova Scotia proper, and in Cape Breton, and might be cultivated to almost any extent. Many persons have commenced to form beds on a small scale, and if reasonable success follows their efforts, many others will engage in the business and, in time, there is a probability of the creation of a large industry. I would recommend that leases be granted where proper efforts are made in this direction, for the purpose of encouragement and to prevent encroachments."

BRITISH COLUMBIA.

From annual report, 1885, page 275 :

" 15. *Mr. J. McLeod* reports that he has planted native oysters on the beds he wishes to lease and that they are doing well. He has already sold twenty barrels, and says the only thing which deters him from importing other seed. is the non-receipt of the lease applied for. I would respectfully recommend that his application may be favourably considered.

" 16. *Mr. A. J. McLellan* reports that the oyster bed under lease from the Government is satisfactory from present appearances ; with the exception of taking a few from the beds to ascertain the growth and watch the spawn, they have not been disturbed. It is his firm conviction that they have thrown out spat as he finds thousands of young fry attached to the shells. He says : 'But must wait for further developments to prove that it is the spat from the imported oysters, they have the natural signs of the imported ones, yet may be the spat of the small native oyster found in the same waters. In order to test the matter, I intend to fence in and protect a few imported oysters in the month of March next, so that in my next report I will be in a position to inform you of the actual developments.'

From annual report, 1887, page 250 : †

" Our oysters are of small size, and only taken in sufficient quantities to meet the local demand. Owing to this, a great deal of those used to supply home consumption are imported from oyster beds at Olympia. These oysters are considered of better quality and finer flavour than our own, which is attributed to cultivation and care. Sometimes a few of the transplanted eastern oysters are imported from San Francisco. They are of good size and look healthy, but are not deemed as good as those taken fresh from the Atlantic. We have a number of defined beds on this coast, but for want of proper care and attention they have deteriorated and are now almost worthless.

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*Inspector Roger.

†Inspector Thomas Mowat.

"Two leases for oyster beds were granted to parties in this province, viz.: One to the Mud Bay Oyster Company, and the other to A. W. McLellan, Victoria Arm. I am informed that it is the intention of the former company to clear the beds and stock them with eastern oysters during the coming season. Mr. McLellan imported a lot of Atlantic oysters to stock the Victoria Arm, and I have written him several times for a report which he promised, but so far he has neglected to send it. I understand, however, that the venture was not a success ; the location being found unsuitable, the 'spat' perished."

From annual report, 1888, page 242 :*

"Oysters.—These have been taken in larger quantities within the past year ; the beds are limited and the variety small. The largest portion of the catch was taken from the Vancouver Island beds. The Victoria Arm lease has been dropped ; the imported oysters which were planted there proved a failure.

"Referring to Guardian Lomas's report, I would recommend that an annual close season be adopted for this province, from 1st May to 31st August, both days inclusive ; that a license fee of ten cents per barrel be placed on all oysters fished exclusive of those taken on leased beds, and that a regulation be made defining the size of the oysters that should be marketed."

From annual report, 1889, page 253 :*

"Oysters were consumed in increasing numbers, and as the beds are limited, and the variety small, the demand is always in excess of the supply.

"The beds where these mollusks are now caught are few in number, the principal ones being Chemainus, Sooke and Comox. Guardian Lomas reports that if the modes of fishing, as at present practised, are not changed, the beds will be ruined."

From annual report, 1890, page 185 :*

"The supply of oysters has increased by about 500 sacks over that of 1889. A sack contains two bushels. The supply is still very short of the demand. This is becoming more apparent every season, as the population increases, which causes the importation of large quantities of oysters from the Sound bed.

"Fish Commissioner Crawford reports that 345 acres are under artificial cultivation in the State of Washington, with an average output of 350 sacks per week during eight weeks in the year, giving employment to about 125 persons, and worth to the State, $21.888. It is well to know what our neighbours are doing, that we may profit by their experience. The regulations adopted by the department for the cultivation of oysters is a move in the right direction, which will be the means of restoring a number of depleted beds to a state of productiveness."

The following are extracted from a report submitted to the department by special commissioners, on the oyster fisheries of the maritime provinces :—

REPORT ON THE OYSTER FISHERIES OF CANADA.

SHEDIAC, N.B., 7th November, 1887.

The Honourable G. E. FOSTER,
Minister of Marine and Fisheries.

SIR,—The commissioners appointed by His Excellency the Governor General in Council, of date 4th July, 1887, namely, Mr. Edward Hackett, of Tignish, Prince County, province of Prince Edward Island, honorary chairman ; Mr. Alfred Ogden, of Halifax, Nova Scotia ; Mr. W. B. Deacon, of Shediac, in the province of New Brunswick ; and Mr. John Hunter Duvar, of Prince County, province of Prince Edward Island, acting as secretary, beg to report :

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* Inspector Thos. Mowat.

Said commissioners were nominated to inquire into and report upon the lobster and oyster fisheries of the Atlantic maritime provinces of the Dominion of Canada, and to offer recommendations for the preservation and development of these fisheries.

The lobster fishery of the Dominion is the subject of a separate report, and is of this date laid before Your Honour.

The commissioners have personally visited the greater number of the oyster grounds in the four provinces margining the Gulf of St. Lawrence, and have to express their view that the live oyster beds are of much larger extent than they anticipated, and, if judiciously supervised, must form a not unimportant item in the national resources of Canada.

The quality of the oysters on the natural live oyster beds of the lower provinces varies much, owing to the nature of the bottom in oyster waters, the depth, and differing salinity of the water, the shelter, thermal difference, and other natural features that have a bearing on the case.

Along the greater part of the shore of the Gulf of St. Lawrence, east of Gaspé, are evidences that oysters once existed in immense quantities, as is shown by deposits of dead oyster shells, which in places are not less than twenty feet in depth. In some places (but not in all) these beds could be replanted or revived.

The decadence (death) of the oyster in these places is explainable by the encroachment of the sea on the shifting beaches, by the clearing away of forests, altering the shallow margins of the shores, and from other causes too obstruse for the commissioners now to go into.

The commissioners have, however, found that the natural live oyster beds of the provinces of New Brunswick and Prince Edward Island, and perhaps of Cape Breton and elsewhere in Nova Scotia, are of large value as a fishing resource, and that there is much ground available in all the Atlantic maritime provinces for profitable private culture under a liberal system that would induce private persons to devote their care to the industry.

The oyster fishery is different from lobster and other fisheries in that it is prosecuted without expense. A boat worth $10 and an oyster-tongs, costing $1, are all the material required. So far as the commissioners can learn there are no vessels specially built for the oyster trade. Large numbers of schooners move annually to the oyster beds and fish them with their own crews, but these vessels are a part of the ordinary coasting marine and cannot be taken into account as part of the oyster fishing plant. It may be mentioned that for want of a system of registration or license, no account can be obtained of the quantities taken by this fleet of one or two hundred sail. It is, however, evident that much greater quantities of oysters are taken than appear in the official returns. And it is not too much to say that half as many young oysters are destroyed by reckless fishing as appear in the Blue-book. Say a further 20,000 to 30,000 barrels recklessly destroyed annually without benefit to any one, and to the great detriment of the beds.

In the absence of any system of registration, the value of plant employed in the Canadian oyster fishery is a matter of mere calculation. Perhaps the following approximates as nearly as possible to accuracy :—

	Value.	Produce last year.
P. E. I.—650 boats and tongs...........	$10,650	33,125 barrels.
N. B.—550 boats and tongs..................	6,150	28,083 do
N. S.—30 boats and tongs....................	330	1,397 do
Total..................	$17,130	62,605 do

An outfit (total first value) of $17,000 would cover the whole oyster fishery,—giving partial employment during three months to perhaps 1,500 men, who may be described as only "occasional fishermen."

The boats are not used solely for oyster fishing. They are the ordinary all-work boats that every farmer with a water-frontage possesses.

In addition to the floating plant, about sixty thousand barrels are annually required, but these are empty flour barrels at 12½ cents apiece.

It will thus be seen that the oyster fishery is carried on without capital.

There is no regulation of the fishery whatsoever, excepting a close season from 1st June to 15th September, inclusive; and shore wardens without boats are utterly powerless to check poaching in the close season.

A series of charts of existing oyster beds and of probable oyster grounds would necessitate prolonged and expensive actual survey, and should be made under the care of a general superintendent of oyster culture.

The commissioners, having carefully gone over the evidence, beg to make the following observations and recommendations:

They would respectfully recommend to Your Honour's consideration that one general law or regulation should cover the whole of the Canadian Atlantic sea-board, with the following provisions, namely:—

I. That existing oyster beds be reserved to the public, and that their limits be officially defined;

II. That mud-digging be prohibited within sixty yards of any officially recognized workable live oyster bed;

And that suitable portions of bays, creeks, estuaries or harbours be considered closed for oyster fishing, and said closed portions be laid off for the digging of shell manure;

III. That bays of considerable extent in which are many oyster beds be marked off in two or more divisions, and that the divisions be fished only in alternate years;

IV. That for the present, the present close season be retained, namely, from 1st June to 15th September in each year, both days inclusive;

V. That under penalty of forfeiture of boat and appurtenances. no fisherman shall bring ashore (excepting for authorized purposes) any "round" oyster that does not measure fully two inches in diameter of shell, nor any long (oblong) oyster that does not measure fully three inches of outer shell, and that possession of such undersized oysters by any person shall be punished by fine;

VI. That all winter fishing be prohibited for oysters (Commissioner Ogden dissenting);

VII. Temporary or permanent proclamation to close localities where the supply is so nearly exhausted as to warrant closure.

VIII. That under section 21, subsection 4 of the Fisheries Act a liberal inducement be offered under a system of leases to persons who will undertake under stringent regulations to grow oysters on private beds. That is to say,—that a lease be given (under bonds), for not more than nine years (renewable) as a nominal rent for the first three years, conditional on a sufficiency of brood oysters being planted on the area within one year after date of the issue of lease. The Government to have a lien on such planted beds;

IX. Easy and inexpensive arrangements, by which persons owning water-frontage may lease their own foreshores for oyster culture from the Government;

X. That Parliament be invited to appropriate a sum or sums for the formation of oyster beds in various waters and places found adapted for that purpose, and for transplanting oysters, and re-stocking exhausted fisheries by natural or artificial means—in accordance with section 21, subsection 5 of the Fisheries Act;

XI. The appointment of a responsible officer of fisheries, capable of the position, and to rank with the Superintendent of Pisciculture, as General Superintendent of Oyster Fisheries, and to have general superintendence of all public and private oyster culture;

XII. A system of registration of oyster boats, with other details to be arranged by the department.

With reference to clause XII., Mr. Commissioner Ogden moved the insertion of the word "free" system of registration, &c.

Mr. Commissioner Deacon moved, seconded by Commissioner Duvar that the annual registration fee for oyster-fishing boats be one dollar—Carried. Mr. Ogden dissenting.

All of which above written report is respectfully submitted.

Dated at Shediac, province of New Brunswick, the fifth day of November, A.D., 1887.

EDWARD HACKETT, *Chairman*,
ALFRED OGDEN,
W. B. DEACON,
J. HUNTER DUVAR, *Secretary*.

ADDITIONAL REMARKS ON THE OYSTER FISHERY.

(By the Secretary of the Commission.)

The enormous extent to which the culture of oysters has been developed on the coasts of some of the Atlantic States of the United States, as well as on the shores of France and Holland and, in a lesser degree, of England, indicates the oyster as a great industrial and national resource. Not every sea-bottom is suitable for oyster culture. The commissioners heard somewhat vague reports of unsuccessful attempts to plant oysters at Caraquet, N.B., Gaspé, Que., and elsewhere in New Brunswick and Quebec. To propagate oysters successfully requires bottom of a certain degree of hardness, free from mud or alkali or sea-vermin, not washed by strong tides nor exposed to being silted over by storms, and with several other minor requisites of detail. The degree, greater or less, of salinity in the water is all-important and can only be judged by an expert and be ascertained by scientific means. A water temperature of 68° to 70° at *spatting* time is also essential. Salinity and temperature vary in almost every bay and estuary, according to depth and bottom and inflow of streams. The size, shape and quality of the oysters themselves vary so much in different bottoms that fishmongers can tell on looking at an oyster in what waters it was found. All of which knowledge—as well as much other information—would require to be possessed by the superintendent of oyster culture.

Section 21, sub-section 4, of the Fisheries Act authorizes the Minister to grant special licenses and leases for any term of years to any person who wishes to plant or farm oyster beds. This gives the Minister unlimited power as to the length of lease. But in section 4 of the same Act his power of granting leases for other fisheries is limited to nine years, excepting under the authority of the Governor in Council.

Any innovation—however beneficial, and especially if it touches fishermen—has to battle against prejudice. Much alarm is already expressed at the bare supposition that oyster beds may be leased, and already is rising the parrot-cry of "monopoly."

Nor is this fear altogether without some faint shadow of excuse. The natural history of the oyster will explain it thus: Natural, or sea oyster beds are not stationary. They throw off "spat," like bees swarming, which "spat" forms other smaller or larger beds, at a greater or less distance around the circumference of the old bed. The fishermen fish out the old bed and then hunt for these new ones. It is obvious that if all the vacant water were taken up by private culturists the fishing area of the public fishermen would be restricted. There is another, not now threatened but positive to occur in a few years hence, namely, the market for oysters is subject to fluctuations, and the public fishermen know nothing of these fluctuations until they offer their oysters to the dealers for sale. The consequence is that at times there is a glut of supply and the shippers will not purchase at any price (therefore the oysters are spoiled) while at another time they are in demand at increased prices. Private cultivators—having a sure "monopoly" for twenty years, or other long term, and who would know where to lay their hands on oysters at half-an-hour's notice, instead of hunting all over the bay for them—would watch the market and supply the demand, thus cutting out the public fishermen. Private culture would thus compete at an advantage over public fishing.

A lease granted for so long a period as twenty years is virtually given away, and practically represents a freehold. After the first four years it becomes a valuable piece of real estate to the fortunate possessor. For the first three years it is all outlay. In the fourth year the first fruits should pay interest on the outlay, but its value increases year by year. The value of the lease or license in the fifth year bears no comparison in value to what it should be in the ninth year, and the ninth year is but trifling in value in comparison with what it ought to be in the fifteenth or twentieth. Government to give a lease at a low or nominal rent for a longer period than nine years would be robbing itself.

Areas for oyster culture are certain, sooner or later, to become the objects of active speculation. For this reason they should be put under the strictest supervision to see that they are planted, *bona fide*, with the requisite quantity of brood fish, and otherwise attended to. This is a matter of importance, inasmuch as the areas fall back into the hands of the Government at the expiry of lease, either to be re-let or to be thrown open to public fishing.

To properly supervise oyster fishing throughout Canada demands a special class of fishery officers (with boats) distinct from the ordinary fishery wardens. Without boats they are nothing. This, however, is a matter of detail. Whatever arrangement is made should be placed under one responsible head officer.

As regards the size of leased areas, it must wholly depend on locality, especially on tides. Four acres of productive oysters is a small fortune, and even one acre would afford a fair income, but a much larger space must be included within the lease, to leave free space for the fall, drifting and collection of spat. At the Yerseke leased oyster beds in Holland the leased plots range from 12 to about 150 acres, and the term of lease is fifteen years, at the end of which term, namely, in 1885, all the areas reverted to the Government, and were re-let at much enhanced prices. The term of fifteen years is too long for Canada, but the principle is the same. All of which shows that the superintendent under whose care the Canadian oyster fisheries shall be placed should be an expert.

Attention is directed to the address of Professor Hubrecht on "Oyster Fisheries in the Netherlands," delivered before the conference of the International Fisheries Exhibition, at London, 1883 ; and to the annual reports, for various years, of the Shell-fish Commissioners of the State of Connecticut, U.S., for information of the proceedings of the commission as to oysters and surveys of areas for oyster fishing. Also to report of United States Fisheries Commissioners for 1876, pages 271 *et seq.* And Canadian Fisheries Blue-book for 1873, pages 197 *et seq.*

2.

The regulations for both public and private oyster beds in France are too tyrannical for this freer land of Canada, and the rules adopted in the Netherlands have too much Dutch stiffness for us more *habile* Canadians. Canadian regulations should rather be framed on the more practical methods in use in the oyster States of the United States.

In the State of Maine, persons wishing to cultivate oysters on the banks of bays or creeks belonging to the State must first obtain a permit from the local authorities. The only exception is in favour of plantations situated in the interior of bays and gulfs. In no case must navigation be impeded.

In Massachusetts, on payment of fees, permits for *twenty* years to plant oysters in vacant waters may be obtained from the mayor and selectmen of each maritime locality, but the national beds must be respected.

In Rhode Island (Providence River) the commissioners of shell-fisheries can grant vacant water for *five* years—and the beds pay an annual tax to the State. In no case can more than *one acre* be assigned to any one person, and only *one acre* per head to members of a company cannot be sublet. No definite term of lease.

In Connecticut a licensing committee, nominated by the people, grants licenses of vacant water for oyster culture. The extent of ground occupied by any one person must not exceed *two acres*. Committees specify the term for which such license may be held.

In the State of New York all land-holders on the banks of Harlem River have the right to plant oysters on their foreshore. In Jamaica Bay, L.I., the same, but no individual nor association can occupy more than *a quarter of a mile* of the foreshore.

In New Jersey, proprietors of tidal waters may use it for oyster culture.

In Delaware, any citizen of the State (but no foreigner) may inclose *one acre* for oyster culture, provided the public beds be not touched.

In Maryland the regulations are the same as in Delaware, namely, *one acre*. Owners of shore frontages have priority of choice.

No information as to Virginia.

3.

With reference to vacant waters and the likelihood of more or fewer natural oysters being found on areas allotted for private culture, thereby causing jealousy and irritation, the following note is appended to the United States Commissioners' report on natural oyster banks or beds, 1876, page 297. The same contingency is covered by section 21, subsection 4 of the Canadian Fisheries' Act, which says: "And the holder of any such lease or license shall have the exclusive right to the oysters produced *or found on* the beds within the limits of such lease or license." The note says: "By a natural bank (or bed) we mean a conglomeration of mollusca presenting a character of continuity, constituting what is usually called an oyster bed. The natural bank may be single or formed of several small banks, separated by greater or smaller spaces, but always sufficiently connected to be considered parts of one whole. As to places where, through accidental circumstances, isolated oysters have developed, they are not classed among the natural beds, since, if this were the case, the largest part of the submarine soil of the coast would be under interdiction and oyster culture would be impossible. However protective the American laws may be in what concerns public property, they are careful not to interfere with private enterprise by a too rigorous interpretation of the term '*public property.*'"

4.

Since the commissioners visited Bay du Vin, N.B., 60 and 70 vessels have been daily fishing and taking away large supplies from the already impoverished beds. The same depletion is going on at several other places.

5.

There are several lagoons and sheltered coves among the Magdalen Islands, where it is believed oysters could be grown successfully, and thereby in the course of a few years, afford a new industry to the rather shiftless and unenterprising population. Frequent shells of oysters are washed up near the Columbine Shoals, thus indicating that oysters have been, or are now, in that locality.

6.

During the past six or eight years, several applications for lease of sea areas for oyster culture have been forwarded from Prince Edward Island to the department, and are on file. The hydrographic system of the province is peculiarly suited for oyster growing, the narrow island being interlaced with tidal creeks and there being no spot of land more distant than eight miles from tidal salt water. Prince Edward Island has also more population to the square mile than any other part of the rural districts of Canada. Almost all the farms are laid off 5 chains and 10 chains in width, and whenever practicable the frontage faces on salt water. The tenure is freehold. This gives an enormous number of claimants who might have the right to take up leases under section IX. of the commissioners' report, and when the matter comes to be understood by the public it is probable that many applications will be received from Prince Edward Island.

7.

COST OF A PROTECTIVE SERVICE.

Although it is beyond the mission of the commissioners to surmise what course the Government may deem it proper to adopt, the following is offered as an estimate of what a thoroughly efficient protective service for the Canadian oyster fisheries would cost annually :—

1 General Superintendent, salary	$ 1,800
His expenses	400
1 Overseer	600
His expenses	300
1 Travelling Overseer (as detective)	400
His expenses, a like sum	400
Clerk	365
1 Surveyor, paid for his work, say	600
12 Oyster Wardens, with boats, viz.:—4 in Prince Edward Island ; 6 in New Brunswick ; and 2 (without boats) in Nova Scotia, at $150 ; Prince Edward Island and New Brunswick at $250	2,800
Cost of 10 boats at $35	350
Wages of boats' crews, 12 men at $90 per season	1,080
Total, say	$10,000

Against which, as a set-off, any license or registration fee, or oyster tax, or lease of private grounds.

8.

Statement of the catch of oysters in Canadian waters, from the year 1870 to 1886.

Year.	Catch. Brls.	Year.	Catch. Brls.
1870	Have no record.	1879	28,632
1871	39,450	1880	34,348
1872	Have no record.	1881	31,498
1873	27,288	1882	54,646
1874	14,318	1883	50,540
1875	11,716	1884	41,956
1876	16,856	1885	57,132
1877	29,576	1886	62,905
1878	30,090		

1887—(P. E. I., to date, 30,000 barrels or upwards.)

J. HUNTER DUVAR.
Secretary of Commission.

From annual report, 1889, page xxxi. Extracts taken from Deputy Minister's report :

THE OYSTER FISHERY.

Its Condition and Restoration considered.

"Only about $165,000 worth are annually produced in the provinces of Nova Scotia, New Brunswick and Prince Edward Island, fully two-thirds of which are taken in the last-named province. It is claimed that, of all the oysters consumed in Canada less than one-third is supplied from native sources.

"There is no sufficient reason why the demand for oysters throughout the Dominion should not be supplied by our own people. The inland markets are easily accessible, and the domestic consumption would, no doubt, be increased if the article was produced and supplied with our own resources, at a lessened cost. The area of oyster grounds on the Canadian coasts is very extensive, and is situated in localities admirably adapted for the growth and nutrition of oysters. This mollusk has been found from Bay des Chaleurs to Bay Verte, in the following places, viz.: Between Caraquet Banks, at Caraquet, St. Simon, Shippegan Harbour and Gully, Tabusintac, Burnt Church, Bay du Vin, and many other places in Miramichi Bay; Kouchibouguac, Richibucto, Buctouche, Cocagne, Shediac and Bay Verte. In Nova Scotia, the oyster is found at River Philip, Pugwash, Tatamagouche, River John, Pictou, Tracadie, Mabou, Margaree, Sydney, Albert Bridge, Country Harbour, St. Mary's River, Liscomb Harbour, Jeddore Head, and nearly everywhere in the Bras d'Or Lakes. It is found around the whole coast of the Island of Prince Edward, and many places in British Columbia are also adapted for the growth and cultivation of oysters.

"In most of these places there are remnants of a stock which, for delicacy of flavour and nutritive properties, is not excelled by the choicest varieties grown and caught on the United States' coasts. Along the whole tidal shores of Prince Edward Island, and New Brunswick especially, oysters of the finest description might be raised in enormous quantities were the natural facilities for their culture enhanced by a proper system of cultivation and protection. When it is borne in mind that the mother oyster yields nearly 1,000,000 of spat each season, some slight conception may be formed of the probable return from any careful system of cultivation.

"In 1880, this industry yielded in the States $13,403,852, eighty per cent of which came from Chesapeake Bay. This high state of productiveness has been attained only by an economic use of existing oyster grounds, accompanied by careful and intelligent cultivation, after the areas of oyster shores had been apportioned among private individuals and regularly farmed. Similar results would be attained by like measures adapted to the oyster fishery on the shores of the maritime provinces.

"In 1881, in France, 29,431 men, women and children were employed in taking 374.985,770 oysters from September to June, worth 12,061,753 francs, equal to $412,350. This was from public grounds alone, independent of private beds.

"The strict observance of the decrees of 1852 in the conduct of the fisheries may be regarded as having contributed largely to the success of the oyster culture in France and to the actual prosperity of this industry. These decrees, the wisdom and opportuneness of which the event has demonstrated, were intended to stop the spoliation and exhaustion of the oyster beds, and subject their exportation to strict regulations. The persevering application of these measures, the care unceasingly renewed, the encouragement and the example which the Administration of the Marine continually gave, resulted in bringing about the restoration of the natural beds which were approaching exhaustion, and in invoking a revival of oyster culture by private individuals.

"In England, in 1883, the value of oysters taken was nearly $10,000,000—(£2,000,000).

"Professor Huxley, Sir James Caird and Mr. Shaw Lefebvre reported to the English Government about the year 1863, calling attention to the falling off of the supply of oysters from the failure of spat. They recommended the acquisition by individuals or companies of sea-bottom for oyster culture.

"Mr. Archibald Young, inspector of Fisheries for Scotland, in a report on the oyster and mussel fisheries, remarks that: 'Promiscuous and ill-regulated fishing on any bed or scalp to which oysters or mussels are attached simply means the extinction of these oysters or mussels in a longer or shorter space of time—especially if no close season is observed, and if immature fish are carried away and sold, instead of being returned to the bed.'

"'The secret of the whole matter is that, where oyster and mussel cultivation has proved successful, the person undertaking the same has obtained a concession from the Government to work the beds exclusively himself, and has not been hampered by other persons claiming a right to fish on his grounds; in other words, fishings are worked in precisely the same way as farms on the land, where the farmer sows his seed, and at the proper season reaps his crop. The allowance of the general public to fish for oysters or mussels without restrictions or regulations means the inevitable destruction of the beds—some sooner, some later.'

"During the course of an interesting debate which took place last session in the Senate regarding the oyster fisheries of the Dominion, Senator Poirier brought the subject to the notice of the Senate, and especially alluded to the great destruction caused by winter fishing through the ice when small oysters and spat are destroyed in great numbers. Senator Macfarlane, whose great experience renders his views important, pointed out the hardship which the prevention of winter fishing would cause to many people. He, however, strongly advocated the restoration of exhausted beds by the Government.

"A special commission, appointed in 1887, to investigate the condition of the oyster fishery in Canada, among several recommendations and suggestions as to the necessity for additional regulations to ensure the preservation and improvement of this important industry, shows that, upon personal examination of the oyster beds, they learned with surprise of the great extent of the area suitable for oyster culture in the Dominion. Many of the beds were found extinct, while others were rapidly becoming exhausted, from want of proper cultivation and protection from indiscriminate and improvident raking.

From Deputy Minister's report, 1890, page li.:

OYSTERS.

"The state of the oyster fishery in the maritime provinces of the Dominion has already attracted not a little attention on the part of those interested in its preservation.

"A commendable effort has been made by a few persons towards the introduction of oyster culture by private enterprise, and the effort has, the department is informed, been reasonably successful. It has, however, become apparent that if this fishery is to be saved from extinction, radical regulations looking to a less destructive mode of carrying it on, are imperative, as already some of the beds in the provinces of New Brunswick and Prince Edward Island, which, not many years ago, were conspicuous for their oyster production, have either become wholly exhausted or so nearly so as to render fishery operations no longer profitable. Notable amongst these are the once prolific beds of the harbour of Shediac, N.B., and although these beds gave unmistakeable signs of exhaustion many years before its accomplishment, an effort made by the Minister of Marine and Fisheries in 1875, looking to their preservation and resuscitation, met with so much opposition in the district that it was abandoned.

"The existing reasons for the depleted state of the oyster fishery are so fully referred to in my annual report of last year that any repetition of the facts appears uncalled for.

"In 1885 the close season for oyster was extended from the 1st to the 15th of September, and the season is now fixed, by regulation adopted on the 6th of August, 1885, at from the 1st day of June to the 15th day of September in each year. This is the only regulation in existence bearing upon the oyster fishery in the Dominion. The fishery has been relentlessly pursued, and may yet be, till the new regulations take effect, by any persons who see fit to rake oysters at any place and in any manner they please, and wholly regardless of the size of oysters taken or the injury to existing beds, by leaving large numbers of small oysters and shells on the ice, in the spring of the year to drop upon and destroy the beds.

"Recently, the undersigned has had the advantage of perusing, among other documents, a very interesting and recent work upon the "Economic Mollusca of Acadia," written by Professor W. F. Ganong, a native of New Brunswick, at present a lecturer in the University of Harvard. Mr. Ganong reviews the condition of our oyster beds, and says: 'There are two futures open to the oyster industry of Acadia; free fishing by the people and a lingering death, or a vigorous Government interference, and a great and lasting prosperity. This is the kernel of the whole matter. Government interference. It has worked well in other countries; it would, under the same conditions, work well in this. The duty of the Government, if it take charge of it, would be two-fold; to regulate the fishery on the public beds, and to give encouragement to culture by corporations and individuals.

"'As to the first, the position and extent of beds must be determined, and each one given a period of rest, being fished not oftener than once in three years; the close season should be vigorously enforced; fishermen should be made, under heavy penalties, to return to the water all oysters under certain sizes; mud machines must be restricted to certain places in each district, being given ample liberty, but not allowed within a certain distance of a living bed; mills must not be allowed to discharge saw-dust into the water within a long distance of a living bed; fishing through the ice should be regulated, so that refuse cannot be allowed to fall on the beds. As to the encouragement of culture, laws should be enacted which would give to a culturist as good a right to his product, and as full protection from theft, as has a farmer. Areas in good localities should be set aside and leased for long periods; but, as a rule, the public beds should not be trespassed upon. Some beds should always be reserved for public fishing; freedom to take wild game, under common-sense conditions, the Dominion should be very slow to take from its citizens. Private individuals should be encouraged to take their seed oysters from our own beds, as there are none better, nor so good, for our climate.'

"The undersigned observes that in France and in the British Isles, as well as in some parts of the United States, the oyster beds are divided into public and private fisheries, and a leasing or licensing system prevails in these countries.

"It was evidently the intention of the Canadian Parliament, so long ago as 1868, to encourage in the same way the development of this important industry, as witness the provisions of 31 Victoria, cap. 60.

"By this Act Parliament provides for the granting of licenses or leases for the exclusive right of fishing oyster beds in any of the bays, inlets, harbours, creeks, rivers, or between any of the islands of the coast of Canada. It provides for the expenditure by the Minister of Marine and Fisheries of all sums appropriated by Parliament 'for the formation of oyster beds in various waters and places found adapted for that purpose, and transplanting oysters.'

"This Act further provides that shell-fish fisheries shall be subject to any regulation or regulations to be made under the Fisheries Act.

"Regarding leases the Minister of Justice expressed the view that 'the instrument given should take the form of a license rather than that of a lease, inasmuch that it might be contended that, by an instrument of the latter kind, the department intended to give possession of the sea-bed as distinguished from a license, and the owner, whether the Dominion or province, or a subject, might contend that such an instrument interfered with the rights of the owners in fee. If the instrument take the form of a license, it will be of the same utility to the holder as a lease; but the holder, instead of having an estate in the soil itself, would only have an exclusive franchise or right of user for the purposes mentioned in the statute.'

"It is therefore apparent that, so far as legislation goes, it is possible to regulate in Canada this fishery as effectively as is done elsewhere, and much can be accomplished under a proper system of regulations.

"In dealing with this matter it is essential to remember the large field open to Canadians for profitable enterprise. The area on the Canadian coast suitable for oyster culture is enormous.

"In 1878, 30,090 barrels were taken in Canada, valued at $90,270; and in 1882, 64,646, of a value of $193,938; while in 1884 only 41,956 barrels, valued at $126,458 were taken.

"Prosecuted with greater energy than ever, and by more people, this fishery produced in 1888 only 56,234 barrels, valued at $163,902, being less than in the years 1897, 1886 or 1882. The consumption or demand for oysters in Canada is considerable, there being imported in the year 1888 as many as 1,698 barrels, 234,502 gallons shelled in bulk, and 198,543 pounds canned or preserved.

In a report made to the Minister of Marine in France by Mr. Brocchi, relative to oyster culture on the shores of the channel and of the ocean, and published in the *Journal Officiel de la République Française*, of the 8th November, 1881, it is stated, when alluding to the success of the industry, that 'the experiments to which the State devoted considerable sums produced great effect.'

"Attention should be directed to the Basin of Arcachon, where experiments have been crowned with wonderful success and to which the undersigned desires to call special attention. In 1863 oysters existed in a natural state in this basin, but ignorance and want of foresight had hitherto produced bad results. 'The natural beds were silted up with mud, and the oysters were rapidly disappearing.' The Government rented parts of the basin for culture, and in 1886 one of the places rented, that of Luhillon, four hectares in extent, furnished more than 5,000,000 oysters. The effect of this was to induce applications for concessions, which greatly increased. In 1879 one of the Government reserves (200 hectares) furnished 25,000,000 oysters. The Basin of Arcachon which, in 1858, only furnished oysters to the value of £100, in 1888, after the introduction of Government regulations and a system of cultivation, yielded 203,279,000 oysters, of a value of £178,887.

"Mr. Brocchi states in his report that, while the number of 'parcs' in 1865 was 297, it rose to 4,259 in 1880. That, during this period, the number of oysters exported rose from 10,584,000 to 195,477,375.

"At Arcachon the rents ranged from 30 to 45 francs per hectare, according to the position of the 'parcs'; while in Brittany, 100 francs for an equal area is charged. Mr. Brocchi deprecates so high a tax upon the industry.

"In a report to the Minister of Marine and Colonies in France by Mr. Bouchon Brandley, Secretary of the College of France, relative to the generative and artificial fecundation of oysters, published, in the journal last referred to, on the 15th December, 1882, he says:

"'The Marine administration has, since the creation of the ostricultural industry, never ceased to encourage by different measures, such as concessions, missions, &c.,

every attempt having for its object the development and perfecting of this industry. It is to this, unquestionably, that ostriculture owes its present prosperity and the constant progress it has achieved—a progress which has been so brilliantly represented at the Exhibition of Bordeaux.'

"Mr. Bouchon Brandley, in another report *(Rapport au Ministre de la Marine relatif à l'ostréoculture sur le littoral de la Manche et de l'Océan, extrait du Journal Officiel des 22, 24, 25 et 26 janvier, 1887)* remarks on the progress of oyster culture in France: 'The strict observance of the decrees of 1852 in the conduct of the fisheries may be regarded as having contributed largely to their actual prosperity. These decrees, the wisdom and opportuneness of which the event has demonstrated, were intended to stop the spoliation and exhaustion of the oyster beds, and subject their exportation to strict and regular regulations.'

"The persevering application of these measures, the care unceasingly renewed, the encouragement and the example which the administration of the Marine continually gave, resulted in bringing about the restoration of the natural beds, which were approaching exhaustion, and in provoking a revival of oyster culture by private individuals.

"'On this subject it might be well to quote such authority as Mr. Harding, who, in his paper on mussels and other mollusks used as bait and food, says:

"'I consider the best and only way that existing natural mussel beds can be properly cultivated and protected is to make them the actual property of some one. If they are allowed to be fished indiscriminately they will quickly become exhausted, as has been the case with hundreds of natural scalps on the coast. Fifty years ago mussels were very prolific on the east coast of England, and almost every small harbour had its natural scalps outside, which fed the 'lays' or fattening grounds inside, to the great profit of the owners of such lays. About that period some ill-starred individual discovered that they were valuable for manure, when commenced a raid on the scalps, which is the origin of their present downfall. I can remember, as a boy, seeing hundreds and thousands of tons brought to land and sold to the farmers for manure at three-half pence a bushel.

"'An Act was passed by Parliament, in 1868, called 'The Sea Fisheries Act, 1868,' which enables the Board of Trade to grant provisional orders to corporations and private individuals to regulate oyster and mussel fisheries; but the result so far has been very unsatisfactory.'

"Elsewhere he writes: 'The secret of the whole matter is, that where mussel and oyster cultivation has proved successful, the person undertaking the same has obtained a concession from the Government to work the beds exclusively himself, and has not been hampered by other persons claiming a right to fish on his grounds.

"'The oyster fishings in Scotland, once so productive, have now dwindled down to a value of £1,000 a year, or a fraction of what they once yielded. There are scores of proprietors in Scotland—I can state from personal knowledge—willing and anxious to begin oyster culture, to restock exhausted oyster beds or to establish new ones; but they decline to make the experiment and run the risk unless they are protected, as in the United States of America, where, for example, in the State of New York, the State sells to individuals an absolute right to foreshores and sea-bottom suitable for oyster culture, and guarantees, at the time, that this right will be protected by the State. It takes from three to four years to rear a marketable oyster; and if during that period there is no security against a fleet of fishing boats swooping down and dredging out all the oysters, as has happened more than once, the proprietor would be a fool who would attempt oyster cultivation.

"'Immediately after my visit to Loch Creran, Mr. Anderson addressed to me the following letter, dated 27th July, 1887, on the subject of the oyster and mussel fisheries on the west coast:—

"'DEAR SIR,—With regard to our conversation of yesterday as to the cultivation of shell-fish on the west coast, I trust the Board will see proper to take action so as to protect this industry, without which protection it can never assume any important proportions.

"'I had formerly occasion to address the Board as to the cockle beds of Barra, since which these valuable beds have followed the great mussel grounds of Loch Roag, and elsewhere, to comparative destruction. Every bed attacked will be treated in the same manner. So long as there is no control the people will continue to fish them out; while, at the same time, they would willingly have the beds protected against themselves were they equally protected against their neighbours.

"'Besides the acts of depredators upon private beds, the industry at present requires to be protected.'"

"Referring to the subject of Government cultivation, Mr. Young, from whom we have already quoted, says:

"'Mr. McGibbon, Ivy House, ex-Provost of Stranrar, who has long been well acquainted with the oyster fisheries in Loch Ryan, and takes a great interest in them, recommends that the Fishery Board should select a suitable locality for the cultivation of oysters and mussels, that is to say, a locality not only physically suitable for the cultivation of the mollusks, but also capable of being easily watched and protected, and demonstrate to the fishermen the advantages of scientific cultivation of both as regards themselves and the general public.'

"The following memorandum by one of the inspectors of fisheries of the British Board of Trade (Mr. C. E. Pryer) will be found of interest:—

"'The inquiry made by the Canadian Minister of Marine and Fisheries appears to refer to the methods adopted in England and France for the selection, for the purpose of oyster cultivation, of areas on which oysters do not naturally exist. So far as England is concerned, the efforts to develop the oyster fisheries has been almost entirely, if not altogether, limited to the maintenance of the supply from actually productive beds, and to the resuscitation of natural beds whose productiveness has deteriorated. Little or nothing has, as yet, been done in this country in the way of attempting to create new oyster beds by stocking grounds not previously known to have produced oysters naturally, though small areas of ground artificially prepared are, in some cases, used as places for the growth, or for the simple storage of oysters dredged from the natural beds, in contiguity to which such areas are usually located. In the majority of cases these areas are private property, and the steps taken are entirely at the discretion and risk of the proprietors or promoters. In cases where application is made for an order giving private rights over grounds on which there is a public right of fishery, it is usual for an inspector to make an examination of the ground by dredging, and to satisfy himself that the conditions are such that there is a reasonable prospect of oyster culture proving successful, and that the probable advantages are not so problematical as to render it undesirable to interfere with the public right of fishing for other fish.

"'The conditions suitable for oyster culture vary, of course, in different localities and with different classes of oysters, but the general requirements may be said to be a suitable soil, consisting preferably of a bed of shells superimposed on hard mud or clay, an absence of sand, and of five fingers, dog-whelks, crabs and other enemies of the oyster, a tidal flow, and a certain admixture of fresh water, varying according as the bed is required for breeding purposes, or mainly as a fattening ground. In some cases oysters grow abundantly on rocky ground, and it is impossible to say generally, without a full knowledge of the circumstances of each case, how far any particular area may or may not be or become a likely oyster ground.

"'A further consideration, which must not be omitted is, the difference between the ordinary American oyster and the European oyster.

"As regards France, I believe the above remarks apply generally. Oyster culture is carried on in that country to a far greater extent than in England, but I am not aware of any French beds artificially constructed or improved which are not on the site of or closely contiguous to grounds originally producing oysters without artificial help.

"'At Arcachon, for example, where the most important of French artificial oyster fisheries are situated, the greater part of an extensive land-locked bay, portions of which originally contained natural oyster beds, has been converted into an oyster farm. The mud lands, foreshore and shallows are parcelled out into small areas allotted to different proprietors and concessionaries, and the flow and reflux of the tide are regulated by means of low embankments and sluices. In this way the water can be retained over ground which would otherwise be too long exposed during the ebb, or it can be excluded when necessary for such purposes as the preparation of the 'collectors' for the spat, the removal of spat, the sorting of oysters, &c. The supply of suitable soil is limited, but in many cases, by its skilful utilization, it has been spread over areas otherwise unsuited for the purpose of oyster culture.

"'In Holland, also, where in some respects oyster culture is carried to a higher degree of development even than in France, and the area of many oyster beds has been extended over spots on which, without such artificial preparation, oysters could not possibly have grown, the natural beds have formed the nucleus of the 'artificial' grounds.

"'A notable instance may be found near Bergen-op-Zoom, where the construction of a railway embankment converted one of the mouths of the Scheldt into a quasi bay almost land-locked, which has since been cultivated as an oyster farm, similar in general features to that at Arcachon, the flow of the tide being regulated by sluices. Oysters always existed over certain parts of the area, but by the construction of dykes, pits and channels, the area naturally available for the production of oysters is largely increased.

"'It is not to be inferred that ground on or near which oysters have never existed may not possibly be converted into an oyster bed, but the probabilities are in favour of spots whose natural adaptability is shown by the presence or former existence of oysters.'"

From Deputy Minister's report, 1891, page xxxiv.:

"OYSTERS.

"Last year's report contained a very full article on the measures which it was proposed to adopt for the preservation and improvement of this valuable industry, and included a *résumé* of regulations for the formation and cultivation, under proper restrictions, of oyster beds. Since then, considerable progress has been made in this direction, and a system of reserving areas for the restoration of public beds, and licensing limited sections of ground to private applicants, for the purpose of encouraging natural and artificial cultivation, is now in full operation.

"At a conference of the fishery inspectors, held at Ottawa during the month of April, 1891, the existing state of the oyster fishing industry of the Dominion, and the best means of securing its expansion and improvement, was fully discussed, with the result that the following recommendations were made :—

"(1.) That no fee be charged for licenses.

"(2.) No one shall fish for, catch, or have in possession, any oysters the product of the Dominion of Canada, between the 1st day of May and the 30th day of September in each year, both days inclusive, and that in all partially depleted beds no fishing in the winter season through the ice be allowed ; the several inspectors to furnish the department with a list of such beds, and the department to make the necessary regulations for such prohibition.

"(3.) No one shall fish for, catch, or possess any 'round' oysters under 2 inches in diameter of shell, nor 'long' oysters under 3 inches of outer shell. All oysters taken under these dimensions to be immediately restored to the water, under penalty of fine and forfeiture of all materials, implements, or appliances used, and the cancellation of the license.

"(4.) That all productive oyster beds now in existence in the waters of Canada be divided with as little delay as possible into three sections, which sections shall only be fished alternately, one section in each year, under the control of the local fishery officers, upon some general plan prepared by the department.

"(5.) The committee recommend that the department take the necessary measures to restock as many of the exhausted beds as possible, and that leases or licenses for a term of years be granted to parties willing to cultivate oysters, where no productive beds now exist, upon such conditions as the department may deem best.

"(6.) Also, that mud digging be prohibited within 200 yards of any live oyster bed; then only at such place, or places, as may be prescribed by a fishery officer.

"APPEAL TO THE PUBLIC.

"It is a well known fact that a great many localities in the maritime provinces which were, at one time, noted for the quality of their oysters, as well as for the fertility of the beds from which these molluscs were taken, have of late years become greatly depleted, and in some cases quite exhausted, owing chiefly to reckless and inordinate modes of fishing and the utter absence of any artificial aid in the propagation of the species, or care in the protection and cultivation of the grounds to which they were indigenous.

"Finding, from inquiry, that considerable satisfaction was manifested among residents of localities where exhausted oyster beds were to be found at the action taken by the department, and that a general appreciation existed as to the necessity of closing them against fishing for a number of years, for the purpose of giving them time to recuperate, the following form of petition was circulated in order to strengthen the hands of the department:—

"'To His Excellency
"'The Right Honourable Sir Frederick Arthur Stanley, &c., &c.,
"'Governor General of Canada.

"'Your petitioners, having learned that Parliament has made an appropriation to meet the expenses in connection with the survey of oyster beds, begs to set forth:

"'There once existed in this locality. viz., extensive oyster beds, the working of which not only furnished employment to many, but also proved an export of considerable value, but from overfishing and other causes the yield of the beds referred to has, for some years past, been falling off, till at the present time they are, if not wholly so, to a large extent unproductive.

"'Your petitioners believe that the restocking of these beds can be successfully accomplished, and that under restrictive regulations the productiveness of the oyster fishery may within a few years be restored.

"'Your petitioners would further state that in the event of any of the oyster areas in their respective localities being selected for the operations of the department, they would approve of all oyster fishing in such localities being prohibited for a term of years.

"'Your petitioners would further desire that upon the expiry of the term of years for which, under the provisions of the Fisheries Act, beds may be set apart for the purposes of culture, that the raking or fishing of the product of these beds should be permitted only under judicious and restrictive regulations necessary for their enforcement and preservation.

"'Your petitioners therefore humbly pray that the locality of may be surveyed and set apart with the above object in view.'

"ANSWERS.

"In response to this appeal, petitions were received praying for the setting apart, survey and restocking of the following waters:—

"Shediac Harbour, Baie Verte and Tidnish, in the province of New Brunswick.

"Eastern Harbour, Cheticamp; Fader's Pond, on the south side of St. Ann's Bay; Sydney River, Lingan Bay, Mira Bay, Catalone Bay, East Bay, and Big Glace Bay, in the province of Nova Scotia.

"Summerside Harbour, Orwell Bay, Enmore West, and Winter Rivers, in the province of Prince Edward Island.

"ACTION.

"An appropriation of $5,000 having been voted by Parliament during the past session for the survey of oyster beds, and for the purpose of assisting in the planting and formation of new ones, Mr. Robert Simpson, C.E., was instructed to survey Shediac Harbour, which was formerly held in high repute for the excellent quality of its oysters, but whose beds, owing to excessive and improvident raking, had become practically extinct. A Minute of Council, based upon such survey, was adopted on the 1st September, 1891, setting apart about 270 acres of water area in the above-named locality, for the purpose of carrying on natural and artificial reproduction of oysters, and authorizing the Minister of Marine and Fisheries to incur the necessary expenditure in connection with such operations.

" It was fully expected that these operations could have been inaugurated during the same fall ; but so much difficulty has been experienced in securing the services of a reliable expert that the experiments had to be postponed until the spring of 1892. This unavoidable delay may, after all, prove beneficial. While several authorities—especially European—contend that the fall is the proper time for planting, many others—and especially Americans—favour the spring months, as allowing time for the young oysters to grow large enough to be able to protect themselves and withstand our rigorous winter climate. Inquiries are being made through the High Commissioner for Canada in London, and Mr. Fabre, in Paris, for the purpose of securing the services of an expert with the view of his taking charge of operations next spring. When the services of a proper person have been secured, the department will be prepared to carry on operations in a systematic and, it is hoped, successful manner.

" A report on the Tidnish and Baie Verte oyster beds shows that the grounds are very much exhausted, and that very little fishing is carried on there at present. This depletion is, however, ascribed to natural causes rather than to overfishing—the water being shallow, the accumulation of old shells, and the ice which forms over the beds, is said to have the effect of killing the young oysters. This seems very plausible, but the real facts can only be determined by means of a careful inspection of the bottoms, which it is intended to have made in the spring of 1892 by one of the officers of the fisheries protection cruisers. A careful examination of the grounds will enable the department to determine whether their condition is such as to warrant the expenditure necessary to survey and restock them.

" *In Nova Scotia.*

" Sufficient information is not yet available to admit of any definite action being taken in the direction of the petitions received from various localities in this province, asking for the reservation and planting of oyster beds ; but it is expected, if matters progress favourably, that it will be possible to begin operations at these points during the coming season.

" *In Prince Edward Island.*

" Summerside Harbour, once famous for the excellence of its oysters, has greatly deteriorated of late years. It is represented as exceedingly well adapted for the purposes of oyster culture, and with this end in view, arrangements have been made for a survey of the grounds and the setting apart of certain areas when operations are begun in the spring.

" Petitions have been received from various other localities in the above-named province, praying that certain exhausted beds be reserved for artificial culture, but sufficient information has not yet been received to enable the department to take definite action, although it may be possible to begin work on some of them during the coming season.

" OYSTER PLANTING.

" In restocking exhausted beds, it is intended that none but the largest and most carefully selected oysters from Prince Edward Island shall be used, and these will be planted only after careful examination of the bottoms and the removal of deposits of mud, rubbish or débris, likely to interfere with their growth. As these operations will be conducted under the supervision of an expert, whose services the department expects soon to obtain, there seems to be no reason to doubt but that our efforts will meet with that success which has attended similar ventures on the great natural oyster farms of the Chesapeake and other localities in the United States. There, an immense area of waters, which either through improvidence or neglect had hitherto been sterile and worthless, has assumed a condition of natural fecundity and great value; and there is indeed no reason why similar results should not attend our efforts, if proper means and care be adopted.

"ADVANTAGES OF CULTIVATION.

"Very little attention has hitherto been paid to the improvement or cultivation of oysters by individuals or private companies in Canada. This has been due, not so much to a lack of enterprise on the part of our people, as to the absence of any regular system of leasing or licensing grounds, whereby parties engaging in such undertakings would be secured in the enjoyment of the fruits of their labour, and guaranteed against intrusion by unscrupulous neighbours, who, considering such work common property, would reap the benefits of their industry. This, of course, acted as a great drawback upon oyster culture by private individuals, and the time-honoured practice of fishing everywhere, and anywhere, at one's own free will, has prevailed. All the department has done was to see that the inadequate close season was strictly enforced.

"The marvellous success which has crowned oyster farming, and private culture especially, in France, England and Holland, has attracted the attention of Canadians, and they begin to realize the advantage of protecting and fostering an industry which, through private care and attention, has been found in the old world to repay handsomely for the labour, attention and outlay betowed upon it.

"LICENSING OF OYSTER GROUNDS.

The applicants for oyster areas are required to make their applications on printed forms supplied by the department, the same being accompanied by a plan of survey made by a qualified surveyor on the basis of the admiralty charts. When these requirements have been complied with, the application is referred to the local inspector of fisheries for inquiry and report, and upon such report the department decides whether it is advisable to issue the license or not.

"The industry being in its infancy in our country, it was deemed unwise to hamper it with any but a nominal license fee. In Europe, the rental of oyster farms rules high, as much as $19 or $20 per acre being paid in Holland, while in France it ranges from 35 to 45 francs per hectare, and as high as the equivalent of $7.60 an acre on the coasts of Brittany. In England, where the rights of fishery go with the ownership of the land, the practice appears to be to form powerful companies with a large capital, and acquire extensive areas at purchase price in the most desirable localities. In the various States of the American Union much diversity of rentals exists. California disposes of her oyster grounds to the highest bidder, and gives a title in perpetuity. The nominal price was at first $1.25 per acre, but the demand for choice limits—in San Francisco Bay, for instance—became so great that as much as $100 per acre has been paid for certain areas. New Jersey sells its oyster grounds to the highest bidder every five years, but limits individuals to ten acres each, and companies to thirty acres. In Georgia a fee of $1 per acre, charged upon all grounds leased for oyster culture, is appropriated to the support of public schools. Rhode Island leases its oyster areas at $10 per acre. In Chesapeake Bay—the oyster fishing waters of America *par excellence*—one of the very best grounds, called 'The Beach,' rents for from 2 to 5 cents per bushel of output, according to location. In the State of New York no uniform system of rental exists, the control of the fisheries being vested in different corporations and municipalities. Rates vary from 25 cents to $10 an acre, although the greatest portion of the rents appear to be about $1 per acre. No one person or firm can hold more than 250 acres, and in certain localities lessees are restricted to three or four acres.

"After a careful consideration of the above facts in connection with the licensing of oyster grounds in Canada, it was decided:

"1. To fix the fee at $1 per acre, calculated upon the acreage at low water, as shown on the approved plan of survey.

"To fix the maximum limit of areas.

"The above system is now in full operation, and during the present year licenses have been granted to the following parties, who have already entered upon the work of planting and cultivating the grounds licensed to them :—

"Messrs. D. Hatton & Co., Montreal, 81 acres near Bay du Vin River, county Northumberland, N.B., licensed for fifteen years.

"Mr. Joseph Hayley, Ruskin, 2 acres in Pownal Bay, Queen's county, P.E.I., licensed for nine years.

"Mr. Charles A. Hyndman, Charlottetown, P.E.I., 40 acres, in North River and Ellen's Creek, Queen's County, P.E.I., licensed for nine years.

"Several other applications from Nova Scotia, Prince Edward Island, New Brunswick and British Columbia are under consideration ; and it is expected that the work of protecting and re-stocking our oyster beds, which has so propitiously begun, and which appears to be so favourably looked upon by an intelligent public, will be greatly expanded, and ultimately achieve the end which this department has in view—that is to say, placing the oyster industry of Canada upon a firm and stable basis of prosperity, so as to provide an additional source of wealth to our country, and particularly to our maritime population.

"Final recommendations in detail :

"(1.) That no fees be charged for licenses.

"(2.) The close time to be established between 1st May and 30th September, both days inclusive, and that in all partially depleted beds, no fishing in the winter through the ice be allowed.

"(3.) Oysters 'round' under two inches in diameter, and 'long' under three inches of outer shell shall not be taken.

"(4.) All productive oyster beds to be divided into sections and to be fished alternately.

"(5.) The department to take the necessary measures to restock exhausted beds, and leases and licenses to be granted to parties willing to undertake oyster cultivation.

"(6.) Mud digging to be prohibited within 200 yards of any live oyster bed, and permitted only at such places as are prescribed by a fishery officer.

The oyster fishery has been partially brought under the license system. The close season is now from 1st June to 15th September. Fishing through the ice is no longer allowed. However desirable a minimum size may be, it would be difficult and expensive to enforce such a regulation. The department intends restocking exhausted beds, and encourages operations of the same nature when undertaken by private parties. The regulations provide for the digging of mussel mud.

From report of the Deputy Minister, 1892, page xv.:

"Previous reports from this department relate the measures adopted, and the work done to promote and preserve the oyster fishery. These reports show that if the oyster fishery is to be saved from extinction, efficient measures would have to be adopted looking to less destructive modes of carrying it on. The reasons for this depleted state of the oyster fishery are so fully set forth in these reports, that it is unnecessary to recur to them again here.

"In 1885, the close season was extended by fifteen days, making it read from 1st June to 15th September, in each year. This was the only regulation bearing upon the oyster fishery of the Dominion, and it was manifestly inadequate to ensure necessary protection to such a valuable industry. The fishery has been, and could still be, relentlessly pursued by persons seeing fit to take oysters at any place and in any manner they pleased, wholly regardless of the size taken and the injury done to the beds by leaving a quantity of small oyster shells and mud on the ice to drop on them in the spring of the year. These facts were brought to the Government's attention by the Minister of Marine and Fisheries in a report dated 1st March, 1890, and a Minute of Council was subsequently adopted recommending the following measures :—

"1. No oyster fishing to be allowed, except under leases or licenses from the Department of Marine and Fisheries.

"2. The close season to be from 1st June to 15th September.

"3. No oysters less than two inches broad or less than three inches in length, to be taken.

"4. Dipping for mussel mud to be prohibited within a distance of 200 feet from any live oyster bed, and then only at such places as may be prescribed by a fishery officer.

"5. The above regulations not to take effect till surveys of the oyster beds are made.

"In order to facilitate the applications of persons desirous of obtaining licenses for the cultivation of oyster beds, regulations were adopted to guide surveyors in preparing plans and descriptions for application for oyster fishery licenses. These are supplied to all applicants free of charge. It was at the same time decided that the licensing of the grounds would be made on the following basis :—

"1. License fee, $1 per acre, calculated upon the draft at low water, as shown on the approved plan of survey.

"2. A maximum limit of areas.

"*Inspection in New Brunswick.*

"After some correspondence with oyster experts in England and France, the Messrs. Frederic and Ernest Kemp, who had had considerable experience in connection with the Whitstable Oyster Company (the largest and most important and influential corporation of the kind in Great Britain), were engaged to come to Canada and make a preliminary inspection of oyster beds. These gentlemen sailed on the 24th May, reaching Halifax on the 5th June following. They immediately proceeded to Shediac Harbour and began examining the beds there. A careful inspection of the whole of Shediac Bay convinced them that it would be a suitable place for natural oyster culture. They found the beds in a most deplorable condition through neglect, want of proper care and attention and the ruthless manner in which the mussel mud diggers had cut them all to pieces, leaving a lot of disjointed patches, with an immense accumulation of soft mud around the beds. It was four days before they could meet with a piece of ground large enough to cultivate oysters upon. The best area was found abreast of Mr. Harrington's house ; it could be very much enlarged by using proper means, there being good ground all round, and a sufficient depth of water. Other beds were also found which can be connected by time, care and labour. The northern portion of the bay was found to be entirely useless for oyster culture, the bottom consisting of long grass and very soft mud, so much so that the grounds known as the Poirier beds are nearly silted up. To make them successful, the Shediac beds must be entirely and thoroughly cleaned by dredges, such as are employed on the oyster beds in England. The rake at present used in Canada should be discarded. It is very destructive to the oyster brood and grounds. There would be no advantage in planting oysters upon such beds in such a dirty state, during the summer season ; but with proper care and attention the experts do not see why these grounds could not be made to yield a never-failing source of supply, as their situation is so well adapted for oyster culture. They conclude by recommending that the limits set apart by Order in Council for the natural and artificial propagation of oysters in Shediac Harbour be changed, the northern portion thereof being of no value whatever for the above purpose. This recommendation has been carried out.

"From Shediac the Messrs. Kemp went to Buctouche, where they found the whole of the oyster beds, with the exception of the Dixon bed, a mass of disjointed patches, caused by mussel mud digging. Up the river, beyond the railway bridge, the beds were in the same condition. The patches generally showed a very healthy condition, with the exception of those where fishermen had been in the habit of raking oysters through the ice. No grounds could be found having sufficient depth of water to warrant the cultivation of oysters in the river and bay. The bed off Dixon's Point was in a dirty condition, showing by the appearance of the soil that it had been long disused. Seven hauls were brought up, yielding eight very large, healthy oysters, and a dredge full of old shells. To clear this ground would prove a matter of very little labour, and oyster brood would thrive therein. In the bay and river, above and below the railway bridge, patches of ground were found teeming with live oyster brood, growing very fast and plentiful. A much greater proportion of oyster brood was found than the full-grown oysters ; one haul brought 10 oysters and 54 brood, another 40 brood and no oysters, and several hauls in like proportion.

"Cocagne Harbour was found to be in about the same condition as Buctouche; oyster brood being much more plentiful than the full-grown oyster. No ground was found available for planting during the short visit of the experts.

"At Richibucto, the experts report things in the same condition as in the two above-named places, with the addition of a much larger quantity of oyster brood over every patch of ground dredged. This brood was abundant and in the healthiest condition. No mortality whatever was noticed; everything brought up by the dredge proved to be oyster brood. The patches were small, owing to the operations of the mussel mud diggers, the surroundings being composed of eel grass and soft mud. Were it possible to form ground sufficiently hard to receive the spat, there could, from Bay Cove to Kingston Bridge, be saved a sufficient quantity of oyster brood to supply the whole of England's oyster beds. On every small patch dredged, the hauls of oyster brood were as follows:—163, 105, 195 and 108. Coming to a more extensive patch, the experts were able to get a larger quantity. One haul brought 811, the greatest portion of which consisted of undersized oysters. The oysters above Kingston Bridge are said to be inferior in quality, but there is reason to believe that if oyster brood were transplanted young on other beds suitable for oysters, they would develop into good marketable oysters. Very few oysters were found in the N. W. River; the grounds appeared to be very old, the mussel mud diggers having cut the beds all to pieces. The only ground found suitable for planting oysters on was between Indian Island and the mainland. Some portion of this was comparatively clean, but the greatest part would require to be cleaned before it could be planted, there being a substantial bottom.

"Throughout the whole of their inspection the experts report that they did not find a single marine enemy to the oyster, which is in itself a remarkable fact. The cause of the depletion of beds can, however, be accounted for in many ways; destruction going on at a wholesale rate. On the arrival of the experts at Cocagne, there were found as many as twelve boats with men in them raking for oysters during the close season. Three of these were seized, but the others managed to escape. While steaming up Buctouche Harbour, a number of boats were noticed raking; the men flew in all directions, leaving their rakes in the water.

"Another cause of destruction is the fishing for oysters through the ice. While dredging, the experts came upon a piece of ground consisting of a high bank. When the dredge was hauled, it was found that instead of life and growth as before, the whole contents of the dredge consisted of bleached shells, with no signs of life on them. There had been brood, but it was dead, and this unmistakeably showed that something was wrong. Subsequent information elicited the fact that this was the result of raking through the ice. Consequently, all brood exposed at such a time of the year means inevitable destruction; also, when the ice thaws, down goes the refuse, making a high bank. The mussel mud digger entirely destroys the oyster beds wherever it is worked. The ground simply becames irreclaimable; consequently, the Canadian oyster beds are becoming more contracted every year. Oysters are, moreover, taken all the year round, regardless of size or close season.

Inspection in Prince Edward Island.

From New Brunswick, the Messrs. Kemp went to Prince Edward Island, on the 30th July, beginning their work by an examination of the oyster beds in Bedeque Bay. They report that the greater portion of this bay consists of mud and long grass, and that nearly the whole of the beds are entirely destroyed by mussel mud diggers. Off Oyster Point, there is a portion of ground where the bottom is hard, but the grass and weeds are so thick that it is impossible to know what the soil is like. Apart from this, there appears to be only one available spot for the cultivation of oysters, situated off the north shore towards Wilmot's Cove. Some part of this ground was found to be clean, but the greater portion was covered with weeds and short grass. The bottom was firm, the oysters brought up were of very fine quality; three hauls yielded 22 oysters and 84 brood in a very healthy condition, the brood showing rapid growth. The grass could, with very little labour, be cleared, and the grounds made suitable for planting. This portion of the bay would be safe against mud diggers, as they cannot find sufficient depth of shells to answer their purpose. These grounds were staked off.

Richmond Bay was found to be nothing short of a gold mine. Some of the beds are extensive, comprising several acres, and the stock compares well with that of cultivated grounds. Its resources appear to be enormous, the beds being well stocked with oysters and brood, which was found to be of good quality and in healthy condition, making a rapid growth. In every part explored, where soil could be found, there were oysters and oyster brood. In no single instance were death or a marine enemy to the oyster met with, a most remarkable coincidence over such a large area of ground. A great number of hauls were made over different parts of the bay. Dead weeds and mud were only noted from Oyster Cove, including Indian River, to Rayner's Creek. The experts were informed that they would not find any beds there, as they had all been cut to pieces by mussel mud diggers, although at one time these were the best in the bay, as the fishermen could always work upon them on account of their being sheltered from strong winds. There were at least four miles of the beds destroyed. Several hauls were made off Mill's Point, McNeil's, Lock Shore, River Platt, Fraser's Cove, Narrows, Lot 12, Squirrel Creek, Niggers Point, Joe Benward's Point, Sally Francis, Cooper's, Bideford River, Schooner's Creek, Barclay's Creek, Front River, Bird Island and Enmore River with successful results. From the Bar to Bryant's Point, nothing but weeds and mud were found, although it is stated that originally the bed was half a mile in length, but it has been completely destroyed by mussel mud diggers.

The experts conclude their report of inspection in Prince Edward Island by remarking that every oyster taken up by a fisherman is brought ashore, regardless of size. These are sold to merchants, who select the marketable ones, and the undersized oysters are thrown away as refuse. Such a disastrous system, they claim, should be put a stop to, and no oysters under the size of three inches allowed to be taken. By this means next year's stock would be saved and the beds preserved. From Richmond Bay the experts proceeded to Charlottetown, and inspected North River, West River, Vernon River and East River. In North River they saw very little soil or oyster ground, but were informed there were oysters above the bridge, where they could not go up with the steam launch. In West River, at Long Creek, abundance of oyster brood in a healthy condition was noticed, growing very fast; the beds extending nearly half a mile in length. In Vernon River three hauls of the dredge brought up 30 oysters and 614 brood. The experts were informed that Orwell Cove and the grounds in Orwell Bay would compare favourably with those already dredged in Vernon River. In East River the beds were completely covered with oyster brood of very fine shape and form, different from the oysters found in other beds in this part of the island. It was stated that a continuation of this brood could be found at every point from 10 to 15 miles along the river. The experts consider that persons who have leased oyster grounds for oyster culture would do well to use this brood to restock them. As a rule, oyster brood picked upon an ebb-dry ground are much hardier than those taken from deep water; and by removing them into deep water they would be secure from the heavy frosts which prevail in Canada. The quality of some of these oysters is quite as good as those of Richmond Bay, many of them being long-shaped. No long oyster should be fished for market under four inches in length.

"Taking everything into consideration, the experts consider there is no danger of Canadian oyster beds becoming depleted if the laws of nature are observed, and the recommendations which they make carried out.

"On completion of their labour in Prince Edward Island, it being found that the presence of Mr. Frederic Kemp was no longer required, he was permitted to return to England on the 10th September, and Mr. Ernest Kemp was subsequently engaged for a period of three years to continue the work. He was then directed to prepare the grounds in Shediac Harbour so as to make them fit for planting, which he did by removing the refuse and culch from the grounds and placing it alongside to fill up soft holes around the beds; the oysters and brood which are caught being placed on other beds not yet touched. He will be engaged at this work until the freezing of the harbour compels him to give it up.

"In addition to the above, Mr. Kemp was directed to inspect Tracadie Harbour, in Antigonish County, N.S., and select areas for the purpose of restocking oyster beds in the above-named waters."

From Deputy Minister's report, 1893, page xlv.:

THE OYSTER FISHERY.

In the spring of 1893 Mr. Ernest Kemp continued the preparation of the Shediac grounds. The cultch and shells which had accumulated on these beds were removed from the top and placed on the mud, on the outside edges, or in some of the holes caused by the mud diggers. The ground was cleaned on the edges, the beds were made much larger, and the soil made ready for restocking with oyster brood. Owing to some delay in procuring the necessary oysters from Prince Edward Island, no planting was done during the fall of 1892. In view of the lateness of the season, the danger from frost, snow, and the change of water, Mr. Kemp deemed it more prudent to delay these operations till the following spring, which he considers the best time for planting, as the oysters will then grow much faster if placed in shallow water during the spring and summer months than if placed in deeper water, as the sun causes the water to become much warmer, the oyster being very sensitive to the action of light and heat, which promotes a rapid growth. Oysters planted in the autumn are not likely to thrive as, owing to the change of soil and falling temperature, the oyster is not properly acclimated before winter sets in, which very often proves disastrous. Oysters grow but very little during the winter months, consequently it is all risk and loss, with no gain, although there are exceptions in every case."

It is not necessary for me to deal with this subject much further, as it can be clearly seen what strain and abuse this industry has been subject to in the maritime provinces, which are fully mentioned in former pages, consisting of mud digging, reckless and indiscriminate fishing, irrespective of size or season, winter fishing, saw-dust thrown in rivers, which cover the beds, ordinary fishing, overfishing, and various other methods have been used, which have only been detrimental to the industry, nature having to contend against all the above obstacles with really no practical assistance from man; but it is to be hoped that fishermen will see the necessity of adhering to the regulations which have been framed in order to assist the recuperation of fished-out areas. Since I have been connected with this department, my time has been wholly taken up with this branch of the industry. I have visited nearly all the principal oyster areas in the maritime provinces; have also cleaned and planted areas as experiments, which have thus far proved successful.

It was not long before the main facts were discovered which have caused the depletion of so many of the oyster beds, and the department have since been engaged in trying to subdue some of the existing evils.

The oyster industry is rapidly passing from the hands of the fishermen into those of the oyster culturist. The oyster being sedentary, except for a few days in the earliest stages of its existence, is easily exterminated in any given locality; since, although it may not be possible for the fishermen to rake up from the bottom every individual, wholesale methods of capture soon result in covering up or otherwise destroying the oyster banks or reefs, as the communities of oysters are technically termed.

The main difference between the oyster industry of America and that of Europe lies in the fact that in Europe the native beds have long since been practically destroyed, perhaps not more than 6 or 7 per cent of the oysters of Europe passing from the native beds directly into the hands of the consumer. It is probable that 60 to 75 per cent are reared from the spat in artificial parks, the remainder having been laid down for a time to increase in size and flavour in shoal water along the coasts. In the United States, on the other hand, about 40 per cent are carried from the native beds directly to market. The oyster fishery is everywhere (except in localities where the natural beds are nearly exhausted) carried on in the most reckless manner, and in all directions oyster grounds are becoming deteriorated, and in some cases have been entirely destroyed. It remains to be seen whether the Government will regulate the oyster fishery before it is too late, or will permit the destruction of these most important reservoirs of food. At present the oyster is one of the cheapest articles of diet in the United States; and, though it can hardly be expected that the price of American oysters will always remain so low, still, taking into consideration the great wealth of the natural beds along the entire Atlantic coast, it seems certain that a moderate amount of protection will keep the price of seed oysters far below European rates, and that the immense stretches of submerged lands especially suited for oyster planting may be utilized and made to produce an abundant harvest at much less cost than that which accompanies the complicated system of culture in vogue in France and Holland.

I will now give a brief description of the cultivation of oysters as it is carried on, under their different headings.

OYSTER CULTURE IN ENGLAND.

THE WHITSTABLE OYSTER COMPANY.

My idea is to try and convey to the mind of the culturist, certain things to be carried out, and others to be avoided in order to make his labours a success. By giving an outline of practical work carried on abroad, it will then show by what ways and means it can be done here, always bearing in mind the difference of temperature which exists in other waters read about, and the grounds which are proposed to be cultivated in this country.

"My intimate connection with the Whitstable Oyster Company, of which I am a member, and where I have gained most of my practical knowledge and experience, will enable me to bring to your notice a few facts connected with the inception, the development and the present standing of the above-named concern.

The exact date of the formation of this company is not known, oysters having been found on these shores from time immemorial; a record of the members who owned the above company is to be seen in the museum at Whitstable, dated about 1660, consisting of about twenty members. This ground as an oyster fishery they found to be very valuable, but labour being very scarce at the time, these members allowed the labouring men to take an equal proportion of the dividend, and finally allowed them to remain as members.

In 1793, an Act of Parliament was obtained, incorporating the company of Free Fishers and Dredgers of Whitstable, and granting them the Common Seal. Since that year, the company has regularly held each July its water court, presided over by a steward. On that day all its officers are elected for the following year. Only freemen are allowed to attend meetings, or fish on these grounds, a rule rigidly enforced.

The membership of this company was originally obtained by birthright, only the sons of freemen were admitted on the annual water court following their twenty-first birthday, but owing to the numbers becoming so numerous, it was decided to take only the oldest sons; finding this course did improve matters in the company, they have last year (1896) formed themselves into a joint stock company, valuing each member's share at so much per head; now a person can sell his whole share, or a portion of it to any one who chooses to buy. The company working strictly on a commercial basis.

The oyster beds are about one and a half square miles in size, but the company hold land and freehold to a great extent.

From two to three hundred men find employment in the oyster fishery nearly the whole of the year. The total number of members at the present time belonging to the company is 550, the annual turnover being about £70,000, and the total value of the whole concern is estimated at about £200,000 sterling.

Their grounds are always kept well supplied with stock, consisting of marketable and young oysters, which are either bred on their own grounds or purchased from the surrounding oyster grounds adjoining them.

A great deal of the labourers' time is taken up on the grounds at Whitstable in keeping the area clean and in order; this is done with more than one motive in view. I must here explain that several classes or qualities of oysters are planted on these grounds, and the area is divided, by stakes, beacons and buoys into square patches, keeping each grade of oyster on its own particular bed.

The workmen receive their instructions from one of the junior officers of the company (having previously received them from the working committee or jury as they are called) commonly known as the "bellman"; he is really a messenger, but when these men are required at an early hour in the morning, they are informed on the previous evening, that the bell will, or will not, be rung the following morning a little earlier than the time named to commence work, to enable the dredgermen to be ready on time.

These men are instructed how long to work; the area they are to work upon, and the quantity of marketable oysters they are to bring on shore; they then leave for the grounds which are from three to four miles distant off shore, the time being set on their arrival on the oyster beds by one of the officers; it is a very pretty sight to see a fleet of sailing sloops and cullers lying idly at their moorings, with everything quiet; but at the cry of "the orders are out," every one being on the alert, there is an instantaneous move made, and all is life and bustle, the row-boats leave the shore with from four to seven men as a crew for each boat, these boats have from a quarter to three quarters of a mile to row to the sailing (or dredging) boats; they use from three to five dredges (five being the limit), and their time on the oyster ground is occupied in culling out from the contents of the dredge all marketable oysters that are required for their day's catch or "stint," as it is called, the spat, young oysters, or half-ware are not overlooked, but are carefully picked out, and if attached to weed, stones or shells, are removed, if it can be done without injury to the young oyster; these are placed on an area especially reserved for them, the shells are then carefully gone through, and if any marine enemies to the oyster are found, such as starfish, dogwhelk, mussels or seaweed, they are placed on one side to be destroyed, the shells are then returned to the water, the dredge is again hauled to the surface and the above performance is repeated.

Sometimes a few boats are to be seen working on an area where the young ones are planted, these crews are generally selected as careful men; they go to examine the state of the ground, pick out all marketable oysters, and see there are no enemies to the young ones. Through the continual working of these grounds, the shells are kept very clean, they lie very thick upon the beds, and this is the only method that is used to try and catch the spat, as the area is so exposed to the open sea and to all the fiercest gales that blow, viz., from the north-west round north to about east-south-east, it is surprising what is annually found on these shells to an interesting observer. Not near enough, however, are saved to supply the demands of the trade, and young native oysters are bought from the fishermen who dredge on the natural grounds, also from oyster culturists in Essex, who are more successful in saving their spat, owing to the sheltered localities in which their beds are situated. These grounds at Whitstable are considered the finest on the coast for fattening purposes, and their name comes first among oyster culturists.

If the boats are working time or tide work, when the day's work is completed, a signal is given by either the foreman, or one of the men in charge of the fleet, to discontinue work; all the boats are then headed for their moorings; on reaching them the sails are furled, the oysters are placed in the row-boats, and every boat makes its way to the company's store with all possible speed, the master of each boat reporting to the officer in charge the number of oysters caught, also the number of men who worked with him. The oysters are received by a staff of men who place the oysters in hoop-nets, which hold about two bushels (16 gallons) each.

Under cover of this store are two large pits with concrete bottom and sides and connected with the sea by a sluice pipe, which dries at half tide: this pit can be kept with fresh sea water or let run dry, as desired. The nets of oysters are attached to ropes and suspended in the pits until they are required for market, the time varying from immediate use to about forty-eight hours, when the stock is again replenished. It is in this way that the public are supplied.

Sometimes, through stormy weather, the stock on hand will get very low, and on such occasions a boat can always secure the number required, and are sometimes paid a little extra for their trouble. The oysters, as they are ordered for market, are raised from the pits, are re-culled, counted, or measured, and washed clean, which is a very important item in the English market, packed up in sealed boxes, or securely sewn up in strong bags; they are then hauled to the railway depot, where the facilities are good for the transit of perishable goods.

These beds lie in about 6 feet of water at low water time, there is a rise and fall of about 12 or 13 feet, ordinary spring tides.

The company is governed by officers elected each year, forming two committees, which work jointly and separately, one called the finance or estate's committee, which attends to the financial affairs, while the other is called the working committee, or "jury"; it is the duty of the latter to see that the ground is properly worked and cared for; they will lay off areas and supetintend the laying and catching of oysters and other minor duties. A chairman is appointed in charge of the former, while a foreman and deputy foreman is attached to the latter, with treasurer, secretary and other minor officers.

Until about the year 1875 no French brood or oysters were laid on English oyster grounds, but owing to the scarcity of spat falling in English waters, on account of successive cold seasons, which has caused a steady decrease of oysters round the British coast, they owe to French oyster culture the success they have been so fortunate in obtaining large quantities of oysters by artificial means, where they are enjoying a milder climate, have crowned their labours with success, and are now enabled to furnish the English markets with whatever supplies that are needed. Larger quantities of oysters are imported from France each year, and before I left England the company alone laid on their grounds 20,000,000 of French oysters to enable them to supply the demands of the trade in the following season, with a good second quality oyster.

These oysters are laid every spring from the south of France on the oyster beds, which are excellent fattening grounds, supplying the public generally with a good cheap oyster, and it is found by practical experience that, commercially, it pays better to purchase an oyster two-thirds grown in the spring of each year than to expend the same amount on artificial experiments. The oysters are sometimes conveyed in large quantities by fast steamers direct from the French plantations, and on arrival are immediately laid on the grounds. As many as 5,000,000 oysters have been laid in the space of four hours. The dredging boats will run alongside the steamer and will take a deck-load of oysters,. and then sail over the grounds, distributing them by means of shovels as they sail along. A large staff of men are usually employed when there is any quantity of oysters to be laid, so that no time is lost and the oysters placed on the beds as soon as possible. In the fall they are caught and marketed, giving employment to a number of the members of the company with a profitable margin. As no artificial means are used beyond shelling and keeping the grounds clean for the propagation of the oyster, large sums of money are required to secure the stock. The price of native brood, or half-ware, has gradually been on the increase. Here is an illustration, for instance. In the year 1860 the vessel of Mr. Kemp, sr., and a few others (called market boats, as they are larger than the ordinary dredging boats, and are engaged in conveying oysters from the different fisheries to market) were engaged in obtaining oysters for planting for the company; one of the cargoes consisted of 112 tubs of oysters (24 gallons to the tub), the price then paid was six shillings per tub, total value, £33 12s. On his return from Canada, after an inspection of the oyster beds in the maritime provinces, in 1892, or thirty-two years later, one of his vessels had on board a cargo of the same quantity and quality of oysters; the sum paid for them by the above company was £15 per tub, or a total value of £1,680, thus showing the care and interest taken to preserve so valuable an industry.

These areas are perfectly level and even; they are kept so by the means of dredges working over them, there is a good foundation of shells which serves as a bed for the oysters, they also act as spat collectors.

The company are most particular with their beds, great care being taken not to disturb or destroy the soil; a vessel is not allowed to anchor on the grounds, they being guarded by three watchboats with crews for night and day work; a rake of any description is not even allowed to be used, under any consideration, under a penalty of £10; and in the year 1887 a vessel named the "Resolute," of about 350 tons burden, through an error in the captain's judgment, ran aground on the beds and remained there for eight hours; although this vessel was owned by members of the above company, yet the matter was compromised by payment of £150 for damages, instead of allowing the case to be settled by law, thus showing the value and the care that is bestowed on these beds. Other companies are just as particular in their care and preservation of their beds.

The company's "store" before referred to, is a spacious building, built at the head of the beach, and, besides containing the pits, the lower part of the building is divided into packing rooms, storerooms for boxes, bags, twine, and other necessary material and implements that are used, offices and committee rooms, and above this flat there is a large hall covering the whole building and capable of accommodating over six hundred persons; it is in this hall that all their meetings are held, being either annual, quarterly or special, and where all their general business is transacted, so that all the work of the company is carried on under one roof. From these offices one has a splendid view of the sea, including the oyster beds in the distance.

This work is carried on year after year by those connected with oyster grounds, much the same as a farmer who attends to his farm and crops, so that by his labour and exertion he is looking toward the future for favourable results.

This company carries on its business on a very large scale. It can, however, be seen how it is done; its methods are simple, great care is taken of the grounds and brood, the storage of oysters in small net bags suspended in the pits is only temporary, as the stock is replenished every day or every other day, as the case may be.

The English and French oysters are not so hardy as the Canadian oyster.

This work could be carried on in just the same way in this country, even on a small scale, and it could be made to pay, with profitable results.

The above company has recently been transformed into a limited company, allowing each member an equal share, and any member is now at liberty to sell his shares to anybody he pleases. I am pleased to state the price of the shares is continually rising, which speaks for itself. The work is still being carried on under a commercial basis, the labourer being paid for his hire, with a staff of experienced men acting as directors and general managers of the concern.

Very little, if any poaching is carried on by the outside fishermen in English waters. At one time some of the ordinary fishermen were strongly opposed to the scheme where companies applied for concessions, but after these companies became established in many cases it was found to be of great benefit to them, as it opened up a ready market for their catch of oysters, whether young or old, and often they would find employment by hiring themselves and their boats to the oyster growers, where their time would be taken up in cleaning and cultivating the grounds, also catching oysters for market when trade was brisk, so that the apparent loss of a small area of ground which was entirely useless to them, but where they would occasionally try to fish upon, eventually became a source of employment to many of them with regular wages.

Should any poachers be caught in the act, they are severely dealt with at the hands of Justice, either by paying heavy fines or imprisonment. To prevent raids being made by poachers on these valuable grounds a staff of watchmen are always on hand for both day and night work. Dogs are often trained on these watch boats to bark as soon as a boat or vessel comes within the limits of the grounds, or is sailing by. These means all tend to keep marauders at bay. Creeps or grapnels are sometimes used; they are attached to chains and spread over the areas, which would catch a dredge if it were hauled over them. Prevention is often better than cure.

Dr. Bashford Dean, in a report on the European methods of oyster culture quotes the following :—

"Oyster culture in England generally varies but little in methods from that of Whitstable; other localities, therefore, need be but little commented upon. At Faversham, to the westward, and Herne Bay, to the eastward, of Whitstable, sediment deposit and invasions of mud, and, at the latter place, shiftings of sand also, have been of considerable annoyance. The remedy has been continual dredging of the grounds, together with judicious shelling or macadamizing of the bottom at certain points. Weeds have been carefully dredged out as a means of keeping the ground clear and allowing the tides to wash off the depositing sediment. In regions where spat is expected to occur with some regularity, the greatest care is taken by reshelling and clearing the bottom, to assure the greatest chance of a successful set. This character of bottom is often secured in the rivers Blackwater, Crouch and Colne (below Colchester) by a regular process of harrowing the bottom during the beginning of the spring. By this means, the loose sediment accumulating during the winter is broken up and carried off by the tide. For this operation a harrow is prepared whose teeth, two or three inches in length, are of iron, bent slightly forward at the tips. When in use it is carefully arranged so that the teeth may not break through the crust which was formed by the shelling process of former years ; this is prevented by adjusting the length of the harrow rope from the dredging vessel, and the behaviour of the harrow, like that of a dredge, is readily determined by the 'feeling' of the rope."

ESSEX OYSTER GROUNDS AND AREAS.

On the northern side of the entrance to the River Thames the county of Essex is situated, with oyster breeding areas in the rivers Blackwater, Mersea, Colne and Crouch ; these rivers contain very valuable oyster breeding areas, they are owned by companies and individuals, who cultivate their beds with extreme care, and protect them from molestation ; their mode of dredging is somewhat similar to those of the Whitstable Company, with the exception that some of these grounds are worked by small steamboats, built expressly for that purpose. Some of the rivers are winding and inland, with a comparatively strong current ; they cannot depend on wind to assist them, and as these beds are worked nearly every day, it is considered more economical to use steam. These boats are built with a very wide beam, and the deck is carried out from the stern of the boat to the outside edge of the paddle box, giving a very large deck area on a small boat.

The owners of these grounds are very particular about the shelling of their beds, as this is the mode of catching their spat ; the shells are exposed to the sun, wind and rain; they are dried in this way ; all animal and vegetable matter dies and becomes separated from them, and on moving these shells they are very clean in appearance, rough to the touch, and are most suitable as spat collectors.

Cockle shells are also used as spat collectors in these rivers, the shells are small and light, not sufficiently large to alter the shape of the oyster in its growth ; they are also easily detached or broken off from the young oyster. Large quantities of cockles are caught at Southend and boiled on the shore, the fish being extracted from them by means of a sieve, just in the same way as cinders are separated from ashes, the fish of the cockle being sent to market already shelled, or in bulk, as we term it, and is considered a delicacy by some ; the shells, after being subjected to boiling water, are very clean, and serve the above purpose admirably.

With some companies, the shelling of their grounds just previous to the spatting season amounts to quite a considerable sum, the shell of the cockle, being very light, is laid down as a finishing touch to their work ; they then let them rest during the summer, anticipating a spat of brood as a reward for their labours.

Cockle shells are also secured for shelling oyster beds from the shores of the Isle of Sheppy.

Oyster pits have been dug out along these rivers abreast of the oyster grounds, for the purpose of storing oysters for immediate shipment in large quantities, especially to the French and Belgian markets ; the oysters are caught daily and deposited in the pits until a vessel arrives for the purpose of taking them across the North Sea ; it was in this way that I became acquainted with their methods, having accompanied my father in one of his vessels engaged in the oyster trade, from the time when I was quite a boy, he having been connected with these merchants and the foreign market since 1859; afterwards taking charge of the work myself. These pits are extensive, and are connected with the river by a sluice, and can be drained dry in one tide if desired, as the bottoms of the pits are above low-water mark. Large quantities of oysters, in fact, nearly all their stock of small oysters, are wintered there on account of the freshets in the early spring, and if the weather is at all severe, the oysters are very much weakened by the frost, with the fresh water added, tends very much to kill them, and it is with this motive the oysters are pitted ; this process also has a detrimental effect on the growth of the oyster, but saves its life, as, in the first place, the English native oyster is of slow growth, but when continually moved from the beds to the pits, and then transplanted back again, it has the effect of materially stunting its growth ; the shell is hard and clean, with a clear pearly inside.

At Brightlingsea, in the waters of Colne Creek, French Portuguese, North Sea and American oysters are laid down for fattening purposes along the ebb-dry, the tide recedes from high-water mark, leaving extensive flats dry, which are excellent fattening grounds. These areas are planted at, or just below, low-water mark, during the spring of the year, the owners watching them and occasionally moving them about to prevent them from being silted over ; also to pick out any enemies or dead ones, and, when ready for market, are easily obtained ; these oysters are disposed of, as a rule, before the frost sets in, which is very destructive to the oyster when it is lying between wind and water, or they are removed to the beds lying in the channel of the river.

At the mouth of the River Colne there is a large tract of water named Pont, with a very firm bottom, something similar to the Kentish flats, where public oyster dredging is carried on ; the oysters caught from such areas as these are generally sold to companies, who relay them on their own grounds. No size limit is in force in England, as the young oyster is valuable, and if caught is not destroyed, but is placed on private grounds, the fishermen being paid according to size and quality.

OYSTER CULTURE IN FRANCE.

Having given a general description of the way in which oysters are cultivated in England, it is perhaps unnecessary to deal with the French methods at any length, as the work is chiefly artificial, and I consider it cannot be carried on as successfully here as there. This is owing to the long severe winters which visit our shores. The ice in the spring keeps the water chilled, and the weather being very unsettled until the spring is advanced, so that the season is late before anything can be done, as it is carried out in France, which I will try to point out as clearly as possible.

The industry in France was practically destroyed by overfishing in the fifties, when the Government took a firm stand and prohibited fishing throughout all their waters. This led persons to think of other ways and means of obtaining oysters, as large numbers were imported for daily consumption. A series of experiments were tried by different persons which fortunately crowned their labours with success. Others, watching their proceedings were induced to make a venture at this new branch of industry, which seemed to spring up like magic. They obtained water areas, which were leased for a certain period from the State. These areas chosen were in sheltered and secluded bays and rivers, the ground was cleared of all mud, weeds and other refuse, the areas were then covered with a coating of shingle, gravel or clean shells ; an order or permit was granted to obtain a small supply of oysters for breeding purposes from public beds, or they were purchased from other merchants, as the case might be. These oysters were then laid on the area so leased. During the spawning season, brushwood was arranged all around and over their plots of land, tiles were also used, which were coated with a solution of sand and lime, forming a rough coating of cement for oyster spat to adhere to ; they are then arranged in layers or in piles laid crossways ; these tiles are not flat, but long and rounded, so formed that the spat might adhere to both sides of it. After the spatting season was over, they were carefully inspected, and if the spat had adhered, the tiles were sometimes placed into deeper water until the following spring ; others would strip them late in the fall. Their mode was to remove the young oysters by means of a peculiar kind of knife or chisel, removing the cement at the same time, and, with practice, a large quantity are removed in the course of a day. The oysters being very tender, cannot stand much rough usage, they are then placed in wire or gauze trays for a short time ; they are nursed in this way for more than one reason. The oysters are carefully handled, removing all the cement that can be done without killing them ; they are then returned to the trays to protect them from the marine enemies, viz., sand, mud, starfish, dogwhelk, dogfish, &c., until they are sufficiently grown to be large enough to deposit them on the layings to grow into marketable oysters. The trays are slightly raised from the ground so that no silt may settle on the bottom, as dirt of any description at this period would be fatal to the young oyster. These trays are placed in shallow water, where the growth is rapid during the warm weather. On these areas, which lie on the foreshores, the culturists will build up low stone walls made watertight with a mixture of clay and straw, having an outlet so that the water may be retained or drained off at will, at low-water time ; if the weather is hot, the water is kept in as much as possible, but if there is work to be done in cleaning or separating the oysters, then the owner can run off the water.

Parcs or clairs are also dug out, or areas are dyked up so as to hold water, and large quantities of oysters are either fattened or raised to such a size that they can be disposed of for transplanting purposes, or sent into the market direct. Whole families will obtain a livelihood in this way, men, women and children using their united efforts in keeping the household together. It must be remembered that in this system of culture the oyster requires to be handled very often, great attention is devoted in keeping the areas clean ; in fact, all their time is given to the cultivation of oysters, and by their energies and perseverance they are often well satisfied with their season's work.

Some of them will commence to strip their tiles in November and December ; others will leave till about March, as by that time all their cold weather that will hurt an oyster is over, then these tiles are again cleaned, and on the appearance of the spat ripening in the parent oyster, they must have all the tiles washed with this solution of cement and in the water ready for another season's spat to adhere to ; great care and caution is used in placing the tiles, because if planted too soon the tiles become coated with slime, and the floating spat will not adhere to them ; then, if these tiles have to be taken out of the water, cleaned again and dipped, the spat may have been emitted and carried away by the tides before the tiles are replaced.

In the year 1874-75 (says Prof. Mobius) there were produced in this bay (Arcachon), 112,000,000 artificially-grown oysters, and in 1875-76 about 196,000,000. This important yield of the last year, as compared with the poor returns of former years, may be accounted for principally through two causes :

First.—The natural oyster beds in the Bay of Arcachon had had complete rest for the entire two years immediately preceding these rich harvests. During the years 1870-71, they had produced only 4,897,000 oysters ; but after this period of rest, in November, 1874, 8,500 persons assembled, and in the space of three hours, during which time the gathering was in process, 40,360,000 oysters were taken from the sea. A great number of these were transplanted, as breeding oysters, to the prepared beds, which covered, altogether, an actual area of sea-bottom of 2,669 hectares (about 5,338 acres).

Second.—The former imperfect method of caring for the oysters had been improved to the extent that the young oysters were protected from their enemies and care was exercised that during hot and cold weather they should always be kept under water.

There is about 15 feet rise and fall of tide in some of these localities, the shores are generally sloping from high to low water mark, this gives persons a large area, and a long time to work between tides ; then some thousands of trays are required to be made, or kept in repair that it can easily be seen there is very little or no time to be wasted.

The chief cause of success of ostriculture in France is the labour which is devoted to their grounds. It is estimated that over two hundred thousand people find employment from this source around the coast of France, it gives a large revenue to the State in the way of leases of the grounds, it is an industry which is felt throughout the country. These oysters, when shipped from one place to another, whether for transplanting purposes or marketable products, are packed in light boxes, and, as a rule, are placed or packed in boxes separately, each oyster being placed with the deep shell downwards. Being packed in this way, they will keep in better condition longer than if they were measured or counted and thrown into the box until it is full. All these precautions require work and attention. Pretty heavy work has to be undertaken to keep the ground clear. All weeds must be removed, cockle shells and sand laid down where there is not enough, and a good clean floor made if it is not there. Labour, however, is very reasonable, and perhaps that is one of the causes of their great success, a labouring man, if working for a company, can be obtained for about 3 francs a day, a woman will earn 2½ francs, girls and boys about 2 francs. (1 franc equals about 19 cents.)

To ensure success, labour must be carried on to a great extent, as there are enemies to the delicate young oysters, and if these were not taken care of in the way they are, there would be nothing but failure and disappointment staring them in the face; this they are aware of, and study their work accordingly. Competition in the trade also adds vim and life to their work, and they are to be congratulated on their success.

After removing the young oysters from the tiles they are placed in oyster trays or cases to keep off their enemies, where they remain for about a month, or possibly longer, in order that those that are damaged may have time to recover; their growth is rapid in this way; afterwards they are laid at the bottom of the clairs.

The clairs, which are used chiefly for fattening and greening purposes (of which the French are so fond), are diluted with a little fresh water, and are kept more stagnant than the ponds which are used for growing purposes. Parc owners affirm that the smaller the quantity of water there is in a clair, the oysters, being more exposed to the action of light and heat, consequently grow with great rapidity.

I would like to show that a little pure fresh water may do good to oysters, both for breeding and growing purposes. I have taken the following extract from *Philpots' Oysters, and all about them*, of experiments made by parc owners at La Gironde, in reference to allowing fresh water to mix with the salt for breeding purposes, which is as follows:—

"The basin is fed by means of a large flood-gate, opened at the rise of tide and closed when it recedes. This flood-gate is placed at the head of a channel, the water from which is blended with fresh water at the mouth of a small stream. At first, great care was taken lest this fresh water should mingle with the sea water during the refilling of the basin. For three years the adult oysters placed in the reservoir of observation emitted no embryos, and even grew thin. The experimenters attributed this impoverishment to the too great saltness of the water, which was so great that it deposited salt crystals on the marine plants contained in the basin. The want of success was evident; the experiments were abandoned, the oysters removed, and the piece of water converted into a fish pond. From this moment care was no longer taken to prevent the mingling of the waters of the stream of which I have spoken with the sea water in the supply canal, and some time after, in raking the soil, a few oysters were found which had been overlooked. It was noticed that they had developed and grown stronger, and a more extraordinary and an unexpected fact was that traces of spat were found in the neighbourhood of the flood-gate, and of the springs which rise here and there on the banks.

"This wholly fortuitous discovery put the owners on the track of the truth. Some hundreds of oysters were again placed in the basin, and some collecting apparatus which was laid down became covered with spat, and everything went on prosperously."

Artificial production aims at the collection of the embryo oysters, and in this way saves a vast number which, but for the intervention of man, would be lost. It is well known that at the moment of its birth the young oyster is provided with locomotive powers, enabling it to swim in the midst of the sea. After drifting for some time, the young oyster fixes itself on some extraneous body, loses for ever its own locomotive organs, and becomes the mollusc so well known. But these embryo oysters cannot fix themselves indifferently upon any bodies coming within range. These bodies must be sufficiently smooth and clean. It happens, therefore, that in the natural course of things, a large quantity of these minute beings, the spat, not finding any objects to which to become attached, fall to the bottom of the sea and perish. That portion which has become attached under favourable circumstances is for a long period exposed to many dangers, but with the care and attention which is bestowed on these plantations, the mortality is only nominal, and if there is loss in the first instance, it is not felt much, for the older an oyster becomes the hardier it is, and is more easily removed to some of the merchants' grounds, who place them in favourable waters until they are ready for market.

The areas cultivated have to be studied, as each or some of them cannot furnish the seed and keep the same in a condition to compete in an open market. Some will engage themselves in securing the seed, and when of a sufficient size, will dispose of them to other merchants whose grounds are so situated and adapted that they will fatten or green the oyster, as the case is required; transplanting oysters in this way, where the waters are at all suitable, has a very beneficial effect; the oysters will often put on a growth of shell, besides increase the size and flavour of the fish.

There are thousands of acres of the French foreshores used this day by oyster growers, and the salt marshes adjoining are converted into rearing and fattening claire; and as their business increases, the question often arises among oyster culturists, after they have obtained their spat, where can they find areas to plant their trays. They have solved the problem by making use of very soft areas on the sides of rivers which would be looked upon by culturists of other countries as utterly worthless. In their experience, they have found that if the surface mud is macadamized with sand and gravel, with a coating of shells a crust may be formed that will serve admirably for their cultural purposes. The crust, when formed, is hard to the foot. By this costly means, miles of bay and river banks are constantly brought into a high state of cultivation.

These figures are from the report of Mr. George Michel. He says that in one year the total output was more than fourteen hundred million oysters, which provided labour for about 300,000 persons, and was worth $2,650,000 in money to France. And this rich harvest was reaped from about 50 square miles of the sea-bottom, which would otherwise have remained entirely unproductive and must, therefore, be accounted an acquisition of valuable territory of far more use to France than many times its areas of African forest or Siamese swamp.

The industry is profitable almost beyond conception, and we are told on another official authority that a crop of oysters valued at eight million dollars was raised in this way upon a farm of 492 acres, while upon another farm of 500 acres, sixteen million oysters were taken in six tides, although there were no oysters to be found there when the farm was established, five years before.

The result of this work is that the natural oyster beds are kept in good order, well watched and moderately worked, become more and more fertile, and the fishery on the beds, which it was feared would disappear for ever, has, on the contrary, become more productive. It should further be stated that in the case of families willing to work, misery has been succeeded by comfort.

OYSTER CULTURE IN HOLLAND.

After explaining the French methods of cultivation, it is hardly necessary for me to go into details with the cultivation of oysters in Holland, as it is carried on in much the same way as in France; but the oysters are of a superior grade, and of slower growth, owing to a colder climate and longer winter. Parcs, tiles and cultch are used to secure the spat, the foreshores are also used as layings for growing purposes, and when winter sets in, those that are not marketed are deposited in a sufficient depth of water to protect them from the frost, snow and ice. The areas are leased for a term of years from the Government, and at the expiration of the term these areas are again leased by auction to the highest bidder.

The grounds are kept in a very high state of cultivation by the leaseholders, and large sums of money are expended in maintaining, dyking and protectiog them from falling into a state of decay. The competition is keen, and the oysters, when on the market, are next in quality and value to the English oysters.

Further north natural beds are found, although they are not very productive, the soil too, becomes more of a shifting nature, that artificial culture has never been successful along the German coast.

The following is an extract from Dr. Bashford Dean's European methods of oyster culture:—

"Among the European systems of rental of State lands, the carefully devised method of Holland is worthy of consideration, especially as the matter of rental with us will become of greater importance as demand for cultural property increases. State policy in Holland has not hesitated to give short leases at competitive prices; on the ground that valuable land should not be continued in the hands of one who does not pay for it a just rental, and that the balance established by competition is apt to be the fairest in the end to all interested parties, State, culturists and public at large.

"The prices of leases vary according to location and past results, showing how the value of one locality above another for this and other purposes of oyster culture appears to be gradually established by experience and is, indeed, recognized by those interested in this industry."

The following are a few comparative numbers of the sums for which the same plots were leased in 1870, and the prices realized in 1885 forwards :—

Allotment No. 162, size 12 acres, was leased in 1870 for 1s. 8d. a year ; in 1885, £202 a year was charged.

Allotment No. 163, 12 acres, was leased in 1870 for 1s. 8d. a year ; in 1885 £227 a year was charged.

Allotment No. 164, 12 acres, was leased in 1870 for 13s. 4d. a year ; in 1885, £252 a year was charged.

Allotment No. 176, 12 acres, was leased in 1870 for £22 10s. a year ; in 1885, £508 a year was charged.

Allotment 220, 120 acres, was leased in 1870 for £25 18s. a year ; in 1885, £33 15s. a year was charged.

Allotment 138, 12 acres, was leased in 1870 for £18 10s. a year ; in 1885, £762 10s. a year was charged.

Others have gradually come down in the market as, for example :

No. 280, 24 acres, brought, in 1877, £45 16s.; in 1879, £1 10s.

No. 415, 18 acres, brought, in 1877, £2 1s.; in 1882, 10s.

The fluctuation is, as you see, indeed, considerable, and only rivalled by that mysterious fluctuation of spat which, in the breeding season, is carried to and fro at each turning tide, all through the basin of the eastern Schelde.

It should also be specially mentioned, that after the Yerseke bed had been withdrawn from public fishing, no obligatory close time for oyster fishing was ever prescribed. The lessees could dredge for their oysters at whatever time of the year they liked. That they did not generally do so in summer was, in the first place, for fear of disturbing the growth, the delicate edges of the shell being at this period more particularly liable to break ; and, secondly, because the oysters are found to be less palatable at this time of the year..

It will be noticed by the above that one of the reasons of success must be attributed to the leaseholders refraining from selling their oysters during the summer months ; although there is no close season, yet their own sound judgment is sufficient to regulate the commencement of the season, which does not begin with them until the weather has become comparatively cool.

OYSTER CULTURE IN ITALY.

Artificial means of collecting spat in Italy has been carried on for years, although the method is somewhat different than that of other countries. It is not carried on to the same extent as in France, as the oysters are not exported in any quantities, and are chiefly used for local consumption and supplying areas in their southern waters with growing oysters. It was here that Coste pictured the successes of the cultural processes of Italy and strongly urged their introduction on the French coast, causing the institution, under the patronage of Napoleon III., of a series of experimental measures, out of whose successes and failures has grown one of the most important of the coast industries of France.

A few extracts from the work of Dr. Bashford Dean on Italian oyster culture, will be very interesting :

"Especially interesting is the fact, already shown by Coste, on evidence furnished by pictured funeral vases, that the processes in use to-day at Tarente, or in the lakes near Naples, are apparently the very ones that the Romans employed as early as the time of Marius. The oyster stakes of the Lucrine Lake, we are told, represent, in appearance, and actual position, the very ones that Pliny may have inquisitively examined, little thinking that their use would be handed down to posterity more carefully than the volumes of his life-long work.

As one approaches the city of Tarente on the railroad from Brindisi, a very good idea may be obtained of the extent of oyster culture as the road bends around the shore of Mare Piccolo. As far out as one can see the bay is bristling with oyster stakes, whose ends project several feet above the surface. eThese are soon observed to pass into distant perspective in regular lines, and to mark off the water surface into squares, as of a checker board. These inclosures, which in France would be called oyster parcs, measure about 15 feet square. They are leased at about 50 cents a year, and each culturist secures as many as he can cultivate. They are rented from a joint stock company, which has obtained from the city council the leasehold of the entire bay-bottom, surveyed out in about twenty sections, for an annual sum of $10,000. The minuteness of the subdivision of this area is the result and also the cause of competition, and the energy of rival culturists adds much to the success of their industry.

The Italian is the very opposite of the French system of oyster culture. French proprietors cultivate the shore lines between the levels of high and low water; their parcs are embanked inclosures, holding a few feet or inches of water until the tide advances; they cultivate their shores in a horizontal plane. The Italians cultivate oysters in all depths of water and make the number of oysters fattened in a given parc stand in proportion to the volume of water. Having but scanty fall of tide, their system has become vertical oyster culture. To cultivate horizontally the French have hardened their muddy beaches, have inclosed tidal areas, and have spread miles of flat cases of iron gauze to furnish growing space for their oysters. The Italian culturist has devised every means of supporting his oysters in the water volume between bottom and surface. In France, owing to unfavourable local conditions, the industry is minutely subdivided.

A parc of several hundred acres may be devoted to collecting the seed oysters, a second parc may be of value in growing the oysters, and a third may serve to fatten or prepare them for transport. A Tarentine parc may represent every branch of the industry; in an area of fifteen square feet a culturist may collect the young oysters, grow, fatten and prepare them for the market.

The Italian process of a Tarentine parc consists, roughly, of corner posts, a web of ropes, and various suspended devices for collecting oysters, growing, fattening and storing them.

The corner posts, firmly implanted, mark the boundaries of the park. At each corner these are usually arranged in pairs, somewhat inclined toward each other, and lashed together a few feet above the surface. Thus fixed, they appear to be quite permanent, especially as their displacement by storm is not usual, on account of the sheltered nature of the Mare Piccolo. The firm calcareous character of the bottom allows the posts to be readily inserted by blows of a heavy mallet. The posts themselves are of green pine, six or eight inches in diameter, are not costly, and are apparently never tarred. The depth of the harbour allows their average length to be about 20 feet. In deeper water, two, or even three, require to be spliced together, bringing, therefore, into culture, a depth as great as forty feet. The ropes forming a network between the corner posts must support the weight of the collecting devices. The cordage must therefore be strong and durable in water. A wire-grass rope an inch in diameter is manufactured in Naples for the purpose. It lasts for one or two seasons, and costs about one-half cent per yard. Baskets are also suspended from the ropes for the purpose of holding oysters which are nearly full grown, and are kept there until ready for market, while others are hung there for spatting purposes.

The arrangement of supporting the ropes are rarely exposed, except where attached to the corner posts. In the parcs established in deeper water the matter of rope management becomes more complicated. The greater amount of rope required by the weight of the cultural apparatus has suggested an arrangement which both separates the cross ropes from each other and enables them to be more easily turned at the corners. With so light a scaffolding to support the devices for collecting and growing the young oysters it is evident that the question of the weight of apparatus has been a very important one. For this reason, as well as on account of lack of tidal ground, the tile, as a device for collecting the young oysters, has been found unsuited. Wood, on the other hand, has advantages, in point of lightness and cheapness. The loose bundles of hazel or gorse boughs, termed fascines, become quickly water-soaked, and form the most convenient collectors. These, when covered with young oysters, may be broken into twigs and woven into ropes which, when suspended, utilize the water volume from surface to bottom. Oysters that have become detached and fallen to the bottom, together with grown oysters, may be placed for storage and final growth in the suspended baskets.

Thus outlined, the method of culture and its conditions may be more carefully examined. The supply of breeding oysters which furnish the spat is, in any event, a large one. The myriads of half-grown oysters lodged upon the suspended ropes spawn prolifically, and this supply is one that never decreases. A second source of spat is furnished by scattered oysters and beds of oysters that have either escaped the knowledge of the culturist or are difficult to secure. General dredging is but little practised. The largest supply of scattered oysters is said to be in the immediate neighbourhood of the parcs where dredging is impracticable. It is certain that the spawning season in the warm waters of the Mediterranean is an extended one, stated by the proprietors to extend from April to October. The greatest set, however, occurs about the end of June. It is clear, however, from fascines that had been put down in January, and which were examined in April, that spawning had taken place during the colder weather, and it may in consequence be inferred that the spawning continues intermittently throughout the year.

The fascines, freshly prepared during the winter, are by degrees taken out during March, April and May, and anchored in deeper water, often in clusters marked with buoys. In the early season the out-going currents are said to be usually the most fruitful in spat, and the culturists arrange their fascines so that they may best be utilized. In May, when the spat is beginning to form in shallower water, the fascines are usually taken up, well rinsed, and, as they are now water-soaked, are suspended in the little parcs. It is here that the fascines get their second crusting with spat, often becoming whitened with accumulated oysters. They are allowed to remain in the better conditions for growth given by the shallower and warmer waters until late in the fall, more often until the following spring. The length of time that the collections are allowed to remain in position appears to be largely dependent upon the character of the season. The collectors from deeper water that have been rinsed and placed in parcs are often added to, if the season appears promising, by fresh fascines, anchored in series and allowed to rise to within a yard or two from the surface. This degree of submergence appears to have been found most favourable for set. At this depth it is certain that the attendants can most readily give them the necessary care. They are clearly seen from above, are readily secured by a cross-barred staff, brought to the surface, rinsed of sediment, and replaced. By this time the oysters have firmly attached themselves to the support, the shells often growing around the slender twigs of the fascine, so that they are apt to be naturally detached, even if the underlying bark has been loosened.

It is not until early in the following spring that the fascines are taken ashore and deposited in huge banks, as a preliminary to weaving the ropes. The attendants now proceed to take them apart, chopping each bough with its attached oysters into twigs about eight inches long. The oyster twigs are now deposited in baskets and are carried to the next attendant, who splices them ingeniously between the strands of rope, so that when completed, the twist of the rope, together with increased weight, keeps the twigs firmly in place. Thus arranged, the rope bristles symmetrically with its oyster bearing burden. Cargoes of these ropes are then rowed to the parcs and put in place. The growing conditions of the oyster now become especially favourable. The heavily burdened ropes swing and vibrate in the currents, allowing each oyster to escape the accumulating sediment and to secure an equal share of the volume of floating food. Their growth is certainly rapid ; an oyster three-fourths of an inch in diameter in March, when suspended to the rope, has attained by October about four times its original diameter, and has thus become marketable. Two years and a half, however, are generally allowed to produce an oyster of first grade in the Tarentine market.

Another advantage the culturists claim for the rope system of culture is the ease with which the entire product of a parc can be overhauled, cleared of attached ascidians, mussels and bryozoans, and, in general (the oysters being in plain sight) guarded from more dangerous enemies. It is evident that rope culture economizes space to a wonderful degree. A single rope 14 feet in length is said to rear about 2,000 marketable oysters. The baskets suspended from the poles are an essential part of the Italian method of culture. In these, stray oysters collected from the bottom, as well as grown oysters taken from the ropes during the process of overhauling, are given their final growth. Storage is thus conveniently managed, the capacity of the baskets being more or less accurately known. The baskets vary considerably in shape and size, the most usual form being loosely woven and shaped like a cheese box. Another device used in giving the oysters their final growth is a net-covered iron ring which, often having a large diameter (five feet), may support four or five hundred oysters.

An important branch of the industry at Tarente consists in the export of seed oysters and of oysters of nearly marketable size, which are intended for fattening in other localities, *e.g.*, Fusaro. Seed from half an inch to one inch in diameter sold during April, 1892, for about 30 cents per 1,000. The price of oysters two years old was then about 80 cents per 100. The average number of marketable oysters produced from each fascine is said to be about 500. The total production of the Tarentine industry can hardly be stated. An estimate, based upon the production of four single parcs, would give the annual yield at about 20,000,000.

Compared with the industry at Tarente, oyster culture in the historic parcs near Naples is decidedly unimportant. A brief discussion of Fusaro and the Lucrine Lake should, however, be given as representing the best types of private industrial establishments, and as illustrating the tidal pond culture of Italy. They are both within a few hours' drive from Naples, and are not over a couple of miles apart. Fusaro, the more northern, shelters under the promontory of Cumae, while Lucrinus, whose size was greatly reduced by the upheaval of Monte Nuova, in 1538, is close to the Roman Baiœ. The entire region is one of great interest to strangers, and the inns in the neighbourhood of the oyster parcs owe not a little to those who evade Pozzuoli, hunt Roman villas, and are inclined to dine upon oysters, seriola and falernian.

Fusaro, described by Coste in 1859, had its industry destroyed about ten years later, partly from volcanic causes, and partly by lack of proper cultural care. Its decadence was caused by the decomposition of organic accumulations which empoisoned the water, by overcultivation of mussels, and by excessive salinity of the water caused by the opening of the second outlet from the lake into the sea. Oyster culture has, however, been successfully reinstated by Sr. Salvator Milosa during the past decade. The present conditions of the lake, and the methods pursued in its re-establishment are therefore of interest.

Fusaro is crescent-shaped, with canals communicating with the sea at either end. It is large, about two miles in circumference, but shallow, averaging perhaps about four feet. Near the southern end, where the large hotel or Casino Reale is built, the water is deeper, shelving at points to about two fathoms. A greater volume of water was secured by dredging out the accumulated sediments, and has proved one of the great causes of recurring success in oyster culture. The former shallowness of the water allowed its temperature to become excessive. The same process of clearing the basin aided the good results obtained by improving the ingress of a small fresh-water stream at the lake's northern end. By this means it became possible to reduce the salinity of the entire water volume, a cultural advantage which was recognized even in the time of Pliny. He records that oysters became larger and finer in the neighbourhood of river mouths, and that they decrease in size and number in deeper sea water.

The industry at Fusaro is represented in the branches of seed collecting, oyster growing, and fattening. The effects of seasons are also extremely varying, and there can be little doubt that the time of fixation of the spat may, under the best conditions, prove as brief as several hours, although the idea given by Coste that the young tend to settle immediately in the neighbourhood of the parent (*e.g.*, attaching to circumarranged stakes) was long since shown to be untenable. Spat collection is extremely irregular in Fusaro and the Lucrine Lake, and if one is to be guided by the suspicions of rival proprietors, a large part of their industry consists simply in cultivating the seed brought from Tarente. The rearing of the oyster is conducted economically. The oyster is allowed to remain upon the fascine until it is almost of marketable size, the base of the shell often becoming not a little roughened by its long contact with the wood of the fascine. Oysters that become detached are usually collected and put for final growth in suspended baskets similar to those of Tarente. The French case of wire gauze, which would seem of great advantage here, does not appear to be employed.

The Lucrine Lake, although smaller than Fusaro, is of great interest from a cultural standpoint. Its establishment is carefully organized and maintained ; its sea wall forms the highway to Naples ; its heavy flood-gate renews the water through a massive sluiceway projecting into the sea. The present establishment would rival in quality, if not in size, its predecessor, famous in Imperial Rome. Monte Nuova, which sprang up in 1538, is supposed to have greatly reduced the extent of the lake and destroyed its ancient prosperity by volcanic ejections. Lucrines is rich in its associations, and is even to-day in the possession of the family of Pollio, which has long held the property, and may represent the Roman Pollio, whose villa, with accompanying collections of ceramics and slave-fed murœnas was undoubtedly in the immediate neighbourhood.

Like Fusaro, Lucrines has its water perceptibly freshened, but its salinity can be better regulated. At one end of the lake a small canal leads a few hundred feet to a circular pond practically of fresh water, fed by bubbling hot springs, this is connected with a second basin of a bubbling spring of slightly greater salinity. To these sources of freshened water should be added a deep spring in the neighbourhood of the ateliers. Lucrines has but a single disadvantage in that its small size restricts its cultural limits, its extent being but about 10 acres. Proportionately, its depth is greater than Fusaro, its basin shelving gradually to about sixteen feet, and the bottom is less muddy, consisting mainly of tufa and sand. Its temperature was the same as that of Fusaro, its greater depth and its constant communication with the outer water tending doubtless to maintain a greater uniformity in this respect. In the winter season, the influence of the hot springs becomes of great service, favouring the growth both of the oyster and of its vegetable food. The proprietor of the lake favours the continuous introduction of sea water. The fall of tide (20 to 30 c.c) is sufficient to allow a proportion of water to pass out and to be replaced. This system has its effect doubtless in preventing the water volume from becoming either too fresh or too warm, and, indeed, the amount of the incurrent fresh water would render it decidedly dangerous to close the floodgates for any considerable time. It is, therefore, not remarkable that spat collecting has never been permanently regulated. The yearly success has remained dependent upon favourable conditions of season, *i.e.*, a season producing a sudden and complete spawning, shortening the embryo's swimming stage, and reducing thereby the chances of the escape of the fry through the sluiceway, granting that an embryo would have a greater chance of escape in forty-eight hours than in four hours.

Culture is carried on by the usual method. The stakes support a meshwork of ropes bearing fascines and baskets. Collectors of all varieties are brought into play, bunches of tiles roughly fastened together, and flat stones even being often included. Rearing is doubtless the cultural strength of Lucrines, and the flattened wickerwork trays, filled with half and full-grown oysters, are suspended at every possible point of support. The growth appears to be phenomenally rapid; a second year is said to be sufficient to produe an oyster three and a half inches in diameter. The Genoese oyster *(Ostrea plicata)* is occasionally produced, being known here as the *Ostrea reale*, and is exquisite in colour and flavour. Other shell-fish are naturally abundant in the basin, the vongola (tapes) being of especial commercial value. The fish supply entering daily from the sluiceway during the falling tide is often of considerable value. The seriola, suggestive of Roman dinners, is especially abundant here.

It will be seen that this mode of culture is entirely different to either the French or English system ; it shows that if the holders are pressed for room, oysters can be successfully cultivated between the surface of the water and the bottom ; it appears to be the cleanest way, as all sediment is so easily removed by a slight shake of the rope ; the growth, also, is very rapid, owing no doubt to the sheltered positions, mild weather, and the hot springs which abound there.

OYSTER CULTURE IN THE UNITED STATES.

Oysters are to be found on nearly the whole length of the coast line, in some places more plentifully than others. There is such a vast area of water suitable to the natural conditions of the oyster and the demand being so great that the grounds are divided into two parts, one being the public or natural beds of the State, and the other consists of areas of ground brought into a state of cultivation by owners and companies who devote their time and spend large sums of money in order to bring these grounds into a high state of cultivation. After that is done, the first expense being the heaviest, the grounds are kept clean, and oysters are obtained for market at the same time. Oysters are considered so cheap and plentiful that they are eaten by all classes ; they are also exported in large quantities to the European markets, also to the Pacific coast for planting purposes. This strain upon the beds has the effect of diminishing the quantity, that it is necessary to protect the oyster to such a degree that, by careful management, the beds will not suffer depletion. Commissioners were appointed in Maryland to ascertain the cause of the oysters becoming scarcer, and in their report they state :

"That the oyster property of the State is in imminent danger of complete destruction. Having reached this conclusion, the next step was to discover the cause of the injury (and that arrived at by various methods was found to be) that the depletion of our beds is not strictly due to any particular method of gathering oysters, nor to the destruction of the young, nor to the working of the beds at wrong seasons, but to the great demand which comes from improved means of transportation, and from the growth of our State of a great commercial industry which has an unlimited and constantly increasing capacity for utilizing oysters. We believe, also, that careful examination of it will convince all of the truth of the conclusion which we ourselves have reached—that the oyster bottoms of our State are of greater value than the dry land, and that they will some day support a great and prosperous population. Their value in the past has been inconsiderable as compared with their possible value in the future, for while the oyster fishermen have never earned much more than two million dollars, it is no exaggeration to state that our grounds are capable of yielding hundreds of millions of dollars annually.

Ingersoll, in his report on the oyster industry of the United States, says that twenty bushels of shells, laid down anywhere in Barnegat Bay, New Jersey, will produce one hundred bushels of oysters ; and a Connecticut writer gives the following as the result of three years of oyster farming under wise laws in that State :—" Fifty thousand acres of entirely barren ground, covered, thirty, forty and fifty feet deep by the waters of Long Island Sound, have been made into productive oyster beds, and have multiplied by a hundred fold the production of native oysters. Ten years ago tens of thousands of bushels of oysters were imported from New York, New Jersey and Rhode Island, and now hundreds of thousands of bushels are yearly exported to these States, and to Massachusetts. Millions of dollars are now invested in the industry, thousands of men and women are employed, millions of bushels are in growing crops, and hundreds of thousands of dollars yearly come into the State as proceeds of exported oysters. The oyster authorities have paid more than fifty thousand dollars in the towns and to the State for grounds to cultivate, and pay a yearly tax of a large amount.

According to Ingersoll, 515,000 bushels of seed oysters were, in 1879, taken from the Chesapeake Bay to be planted in Connecticut, and three years of wise management have produced such a change that one firm shipped to San Francisco, in the spring of 1883. 15,000,000 young oysters which had been reared on the Connecticut oyster farms, and were used for planting on the Pacific coast. This State is now able to sell seed oysters to the planters of adjacent States, besides sending an immense supply to Europe.

In the possibilities of the Maryland oyster industry, the following is quoted :—It is a shame that the gifts so lavishly bestowed by nature upon Maryland and Virginia should receive so little practical appreciation. There has been no lack of warning, nor can our people plead ignorance of the true remedy. In a paper (referred to) one of your commissioners discussed at considerable length and warmly recommended a plan which was employed two years after by the people of Connecticut on a very extensive scale, and with such good effect that the oyster grounds of that State have been raised in three years from a position of insignificance to the front rank. If the importance of shelling our oyster bottoms with dead and clean oyster shells had been recognized at the time when we recommended this practice, and if the laws which are needed for its encouragement had then been enacted, our oyster supply would now be in no danger of exhaustion. But this recommendation met with no attention, as it was looked upon as an unpractical view of a student.

In this country oyster culture is an institution of great importance. On the sea-board of this vast continent they are found in natural beds of wonderful extent, and are distributed by means of railways and steamboats throughout the cities and villages of even the far inland districts. Numerous as are the shell-fish shops of London, they are but as one in ten when compared with the oyster houses of New York, in which city oyster-eating appears to be almost the sole business of life, so many people are to be found indulging in that pleasure. The custom is to have the oysters cooked, and this culinary process is accomplished in a variety of ways, the mollusc being stewed, fried or roasted, according to taste. They may be had cooked in about twenty different ways, in any of the well-known oyster taverns of New York, at a few minutes' notice. The great market for oysters is the city of Baltimore, in Maryland, where it is not uncommon for one or two firms each to "can" a million bushels in one year. Immense numbers of these "canned" oysters are despatched all over the States, to the prairies of the far West, to the cities of New Mexico, to the military forts of the great American desert, to the restaurants of Honolulu, and to the miners searching for gold on the Rocky Mountains; whilst fresh oysters, packed in ice, have been sent to great distances.

The following figures will show that Baltimore is the largest oyster market in the world. The average consumption for seven months in the year is 35,000 bushels per day. One firm alone, from October 1st till June 1st, averages 4,000 bushels a day, packing from 16,000 to 25,000 cans daily, hermetically sealed, containing one and two pounds of oysters.

Oyster farming in America, as Philpot points out, which presents some features of resemblance to the French system, and also many differences, has grown up as the result of private enterprise, without any help or any direct encouragement from Government.

Several years before Coste and De Bon commenced their experiments, the oystermen of East River, having observed that young oysters fastened in great numbers upon shells which were placed upon the beds at spawning season, started the practice of shelling the beds in order to increase the supply; and in 1855, or three years before Coste represented to the French Emperor the importance of similar experiments, the State of New York enacted a law to secure to private farmers the fruits of their labour, and a number of persons engaged in the new industry on an extensive scale.

In portions of Long Island Sound, especially off New Haven, it has been needful to make a crust or artificial surface upon the mud before laying down the shells. This is done with sand.

The deep-water cultivators proceed in three different ways to make beds. First, the bottom being properly cleared off, the seed oysters, mixed with the gravel, jingles and other shells, just as they are gathered from the natural beds are distributed thereon more or less uniformly, and there left to grow. Second, the bottom is spread over with clean oyster shells just before the spawning season begins, and brood oysters, twenty-five bushels to the acre, are distributed over the bed. Third, or if the bed is in the neighbourhood of natural beds, the shelled bed is left, without further preparation, to catch the spawn as it is drifted over it. Sometimes the shells fail to catch a "set," and this makes it necessary to rake over the shells the following year, or to cover them over with more fresh shells for the next spawning. There is always an abundance of spawn in the waters of the Sound, and when a set is secured, an enormous crop is the result. On a private deep-water bed, during the past summer, the dredge was drawn at random, in the presence of the commissioners, and from an ordinary sized shovelful there were counted 206 young oysters in excellent condition, of the average size of a quarter of a dollar. As many as a hundred young oysters have been counted growing on a medium-sized oyster shell.

The beds are carefully tended, and no pains are spared to kill all the enemies of the oysters found among them. By continual vigilance, the private beds are kept comparatively free from them. The larger proprietors of deep-water beds use steamers for this work, as also in doing their work of planting, raking over and dredging, and they use larger dredges than the sail vessels can, as they are also worked by steam, at a great saving of labour and expense. When the oysters have grown on these beds to a merchantable size, they are sometimes sold directly from the beds, but more frequently they are transplanted into brackish or fresh waters, where they are permitted to remain for a short period, to freshen and fatten for market.

The foregoing table affords the ground for the assumption that by the time of the opening of spring work in 1883, 45,000 acres of ground will have been deeded to applicants by the commissioners. These, with the 45,000 acres deeded by the towns prior to May, 1881, will show an aggregate of 90,000 acres held by cultivators under State jurisdiction. Of this vast area a large portion has been cleared up and shelled.

THE OYSTER FISHERY OF CONNECTICUT.

The methods employed in this State are of the greatest interest, for Connecticut has been able, by the adoption of a wise plan, to build up a great oyster industry in a very short time, and to place the business upon a sound and substantial foundation. The natural resources of this State are limited, for upon the most liberal estimate, her natural beds do not exceed 5,000 acres, all told, which furnish a few marketable oysters, and are chiefly valuable as a supply of seed oysters for planting. Three years of efficient protection, under wise oyster laws, have produced such a change that the State, which was so recently compelled to purchase oysters for planting has, we are informed by good authority, this year furnished seed in considerable amounts to New York, Rhode Island and New Jersey, besides sending an immense supply to European planters. One firm shipped, in the spring of 1883, sixty car-loads of seed oysters to San Francisco, from the beds of Connecticut. The sixty car-loads, or more than 15,000,000 young oysters, had been engaged by persons employed in planting on the Pacific coast.

A method which is capable of producing such a result as this, in three years' time, is worth most careful examination. The waters of the State are divided into two districts, a shore district and a deep-water area. In each area there are natural beds, which are open to the public, and private grounds which are appropriated to individuals or companies by law for the cultivation of oysters.

The Public Beds of Connecticut.

The natural beds are open to all residents of the State, at all times except at night; but no one is allowed to use a steamboat upon them, or to use a dredge which weighs more than thirty pounds. The use of steam vessels for dredging upon the public beds has only recently been prohibited. Steam vessels are used upon the private oyster beds, and the proposition to close the public beds to them was warmly attacked, but was finally adopted, and made a law by the legislature in 1881.

In gathering seed near the shore, tongs, and occasionally rakes (those with long curved teeth) are used, but the marketable oysters are nearly all brought from the bottom by dredges of various weights, and slight differences in pattern. In the case of all the smaller sail boats, the dredges having been thrown overboard and filled, are hauled up by hand. The oysters themselves are very heavy, and frequently half the amount caught is composed of shells, dead oysters, winkles and other trash, which must be culled out, thus compelling the oystermen to do twice or thrice the work which they would be put to if there were nothing but oysters on the ground. The work of catching the oysters by any of these methods is, therefore, very tiresome and heavy, and various improvements have been made, from time to time, in the way of labour-saving, from a simple crank and windlass to patented complicated power windlasses, similar to those used in the Chesapeake boats. When a proper breeze is blowing, dredging can be accomplished from a sailboat, with one of these windlasses, with much quickness and ease. In a calm or in a gale, however, the work must cease, as a rule. Under these circumstances, and as the business increased, it is not surprising that the aid of steam should have been enlisted; nor perhaps is the controversy which has ensued to be wondered at, since the introduction of novel or superior power into some well-travelled walk of industry has ever met with indignant opposition.

The first utilization of steam in this business, so far as I can learn, was by Captain Peter Decker and brother, of South Norwalk. After the Messrs. Decker's experiment, Mr. W. H. Lockwood, of Norwalk, not an oysterman, but an enthusiastic believer in steam-dredging, built the steamer "Enterprise" expressly for the business. Her length is 47 feet, beam 14 feet; she draws 4 feet of water. She handles two dredges, has a daily capacity of 150 or 200 bushels. These were followed by several other steamers.

The Private Oyster Grounds of Connecticut.

The lands which are thus appropriated are taxed like real estate. And they may be attached or executed upon like real estate. The oyster committee of each town has power to decide upon the sum which is to be paid for the grounds, and the term of years for which they are to be leased. No person can gather any oysters upon private grounds unless they are properly staked or buoyed out, and marked at each corner with the owner's name. The removal of oysters from private grounds, without authority from the owner, is punished by a fine of from $800 to $500, or by imprisonment for one year; and the injury or destruction of the stakes or buoys, or the grounds, or the oysters upon them, is punished by a fine of from $50 to $700, or by imprisonment from one month to six months; and any boats which are used in violation of these laws are sold at auction, the captain receiving one-half the proceeds, and the town the other half.

Certain towns, however, have a somewhat different law; thus, the town of Guildford has, by special Act of legislature, the right to lease its grounds for ten years to the highest bidder at public auction, but it cannot lease more than five acres to one person. The grounds which are thus appropriated to private parties by the towns are not used for farming or propagating oysters, except in a few cases, but simply for planting. and the seed is either taken from the public beds or is purchased from the holders of private grounds in the area under the jurisdiction of the State, or from persons outside the State. The system does not, therefore, materially increase the number of oysters, but it does greatly increase their value: and it is therefore a great source of wealth to the people of the State, and nearly all lands adapted for the purpose are now appropriated.

Deep-water Oyster Cultivation in Connecticut.

The business of planting oysters in Connecticut, under the provisions which have just been explained, grew so rapidly that all the available inshore bottom near New Haven was soon occupied, and these waters looked like a submerged forest, so thickly were they planted with boundary stakes; and at last Mr. H. C. Rowe ventured out into the deeper water of Long Island Sound, and inaugurated a new era in American oyster culture, by the establishment of an oyster farm in water forty feet deep.

This new departure has led to the development of a new form of oyster culture, which is not planting but farming in its true sense, since the "seed" oysters are seeds in reality, bringing forth after their kind a thousand fold, and thus building up, on private grounds what can be most briefly described as artificial *natural* beds of oysters. The movement which has led to this result is the most important step which has ever been taken in America towards an enlightened method of managing the oyster industry. It has been met at each stage by the most violent opposition, and its history should be of the very greatest interest to all States which control waters in which oysters flourish. Mr. Rowe soon had many imitators, and as oyster culture in deep water cannot be managed on a small scale, the tracts which were appropriated were necessarily outside the limit of two acres, which was all that was allowed by a strict interpretation of the law.

The rapid development of the industry was watched with angry excitement, and as it was seen that the existing statutes had never contemplated anything of this sort, alterations and amendments rapidly followed one another, now in the interest of the deep-water cultivators, and now in the interest of the owners of the small planting tracts nearer the shore.

The fishermen along shore indignantly opposed the capitalists, and on the ground that everything under the water is common property, openly removed the oysters from private grounds. As there was no survey or exact delineation of the "natural beds," unlimited stealing from private grounds was perpetrated and looked upon with general favour by the great majority of the fishermen, on the plea the grounds in question were "natural beds."

The deep-water cultivators, increasing in numbers and in influence, were able, in 1875, to secure the passage of a law declaring that in a considerable area of the State there are no legally "natural beds," and the possibility of successfully propagating oysters in great numbers, in deep water, was soon proven, and the business continued to grow and to increase in importance, in spite of opposition; but so much discontent existed that a resolution was passed by the legislature of 1879 in its favour.

The following account of the method of laying out and stocking a deep-water oyster farm in Connecticut, and the statement of the attendent expenses, is copied from *Ingersoll's "Report on the Oyster Industry of the United States"* :—

"The process by which a man secures a large quantity of land outside has been described. It is thought hardly worth trying unless at least 50 acres are obtained, and many of the oyster farmers have more than 100 acres. These large tracts, however, are not always in one piece, though the effort is to get as much together as possible. He obtains the position of the ground, as near as he can, by ranges on the neighbouring shores, as described in his leases, and places buoys to mark his boundaries. Then he places other buoys within, so as to divide his property up into squares, an acre or so in size. In this way he knows where he is as he proceeds in his labours. Having done this, he is ready to begin his active preparations to found an oyster colony.

Preparations.

When a cultivator begins the preparation of a deep-water farm, his first act is to scatter over it, in the spring (about May), a quantity of full-sized, healthy native oysters, which he calls "spawners." The amount of these that he scatters depends on his circumstances; from thirty to fifty bushels to the acre is considered a fair allowance here, I believe. The rule is, one bushel of spawners to ten bushels of cultch. He now waits until early in July (from the 5th to the 15th is considered the most favourable time, when he thinks his spawners must be ready to emit their spat. He then employs all his sloops, and hires extra vessels and men, to take down to the harbour the tons of shells he has been saving up all winter, and distribute them broadcast over the whole tract of land he proposes to improve that year. These shells are clean, and fall right alongside of the mother oysters previously deposited. The chances are fair for catching of spawn. Sometimes the same plan is pursued with seed that has grown sparingly upon a piece of ground; or young oysters are scattered as spawners, and the owner waits until the next season before he shells the tract. Sometimes the ground must be cleaned before any preparation can be begun upon it, by elaborate dredging, or otherwise. Within the harbour, for instance, considerable muddy bottom has been untilized by first paving it with coarse beach sand. No spot where there is not a swift current is considered worth this trouble. The proper amount is 200 tons of sand to the acre, which can be spread at the rate of five sharpie loads a day, at no great expense. The sand forms a crust upon the mud firm enough to keep the oyster from sinking, and it need not be renewed more than once in five years.

Expenses of an Oyster Farm.

In either case, therefore, the planter's expense has not been enormous. I present herewith two statements of the outlay under the operations outlined above, which are as follows :—

No. 1.—Fifty acres—

2,000 bushels spawners, at 30 cents	$ 600 00
15,000 bushels shells, at 3 cents	450 00
Planting 15,000 bushels shells at 4 cents	600 00
Total	$1,650 00

No. 2.—Sixty acres—

2,000 bushels spawners at 56½ cents	$1,130 00
17,000 bushels shells, at 4 cents	680 00
4,453 bushels Bridgeport seed, at 10 cents	445 30
Total	$2,255 30

In a third case, Captain George H. Townsend gave me a statement of the expenses of starting a farm of 25 acres off the mouth of East Haven River. This was a more elaborate arrangement, but, on the other hand, was accomplished through a variety of favourable conditions, cheaper than would have been possible with the ground otherwise situated.

2,000 bushels small river oysters, at 25 cents	$ 500 00
Spreading same and staking, at 5 cents	100 00
600 bushels dredged seed, at 40 cents	240 00
10,000 bushels shells, put down at 4 cents	400 00
Total	$1,240 00

It would not be unfair to average the cost of securing, surveying, and preparing the deep-water beds at about $40 an acre, or about $4,000 for 100 acres. To this must be added about $2 an acre for ground surveys, buoys, anchors, &c. This starts the planter in his undertaking, and if these beds are in an exposed position they are liable to suffer loss by storms, shifting sands, &c.; if, on the other hand, they are well protected by nature, there is the watching and attention to be given to these grounds, as the catching of the stock, after it has matured, or the separating of the seed which must cost a further sum, but when once started, there are always oysters which are caught that can be marketed, so that you are killing two birds with one stone, catching the oysters, and cleaning the grounds.

Management of the Oyster Farm.

Having secured a spat of young oysters upon the cultch which has been laid down for them, they are left alone until they attain the age of three, four or five years, according to the thrift and the trade for which they are designated, by the end of which time they have reached a large size and degree of fatness, if the season has been favourable. If, as is largely done by those planters who live at Oyster Point, the oysters are to be sold as seed oysters to Providence River, or other planters, they are taken up when only one or two years old. Not a great quantity of this seed was so disposed of last year, not over 20,000 bushels, I should say. It is not considered, as a rule, so profitable as to wait for the maturity of the stock.

THE OYSTER INDUSTRY OF NEW YORK.

Many of the natural beds in these waters have been entirely exterminated, but, notwithstanding the great drain upon them which has followed the growth of the city of

New York, many of the beds in East River, and upon the south shore of Coney Island, are still in a prosperous condition, and continue to yield fine oysters for food, as well as a valuable supply of seed oysters for planting. The preservation of these beds is no doubt due in part to the prohibition of dredging, but chiefly to the fact that for the last fifty years their fertility has been increased by the practice of shelling them just before the spawning season, and thus securing the attachment and growth of a great number of young which would be lost without this artificial aid.

The methods of oyster farming which are employed by the cultivators of New York have been fully described, and it is only necessary to say here that these efforts have resulted in the preservation of beds which, owing to their proximity to the great centre of commerce and population, have been very heavily taxed by the demands which have been made upon them.

Oyster Laws of New York.

No person who has not been a resident of the State for six months can take oysters within the State, unless such non-resident is employed by a resident.

No dredge operated by steam, or weighing more than thirty pounds, can be used.

No natural bed can be used for planting, or can be staked off for private use.

No non-resident can plant oysters in the waters surrounding Staten Island, without the consent of the owner, and no non-resident can take oysters from the natural beds in the same waters.

No person is allowed to dredge on the natural beds in the vicinity of Staten Island.

Any owner of land adjoining Harlem River may plant oysters in front of his property, where the ground is not occupied. and no person can take oysters from such ground without his permission, under a penalty of $50.

The penalty for catching or dredging oysters on private grounds in East River is a fine of not more than $250, or imprisonment for six months, or both.

In Queen's County, any resident may plant oysters in any public waters where there are no natural beds, but no person can hold more than three acres, nor can he hold it unless he uses it for planting.

No person is allowed to take oysters in Great South Bay, Long Island, with a dredge, or in the night, or between June 15th and September 15th, under a penalty of $250, imprisonment for six months, and an additional fine of $600 for each offence; half the penalty goes to the informer.

In Suffolk County, any five or more persons who hold oyster lots may form a company or corporation, for the promotion of oyster culture in these lots.

The towns of Babylon and Islip, in Suffolk County, have a special law, which is substantially as follows :—

Any person who is of age, and who has been an inhabitant of the county for a year, may appropriate four acres, where the taking of claims cannot be profitably followed as a business, and upon the payment of $1 per acre annual rental, and the costs of surveying, he has the exclusive use of the land for the cultivation of oysters, so long as he keeps it marked out and remains an inhabitant of the county; but he is required to pay his annual rent on or before the first day of April, and to plant at least 100 bushels of oysters and shells on the ground, within one year of the date of his certificate, and in case of failure the oyster commissioners have the power to terminate the lease.

Any person may sell and assign his interest in private oyster ground to any inhabitant of the county for one year, but no person can at one time hold more than four acres.

There are three commissioners appointed by the town auditors, with power to determine what grounds shall be appropriated, to make surveys and maps, to settle disputes regarding boundaries, and to receive money.

The unlawful taking or disturbance of oysters on private grounds is punished by a fine of not less than $100, or by imprisonment for not more than sixty days, or both.

There is no oyster police, but the planters have formed a protective association, and employ private watchmen.

Any inhabitant of the towns of Hempstead and Jamaica, in Queen's County, may appropriate three acres of any lands which are not already appropriated, for the cultivation of oysters ; and upon the payment of an annual rent of $5 per acre, he has the right to use the land for this purpose so long as he remains an inhabitant of the towns. No dredging is allowed in these waters, under a penalty of $100 fine, or sixty days' imprisonment, or both, and the taking or disturbance of oysters in private beds is punished by $100 fine, to be recovered by the owner.

According to the statistical summary of Professor G. B. Goode, the oyster fisheries of the United States employ 52,805 persons, and yielded, in 1880, 22,195,370 bushels worth to the producer, $9,034,861. There is to be considered an enhancement on 13,047,922 bushels in passing from producers to market. This enhancement, which amounts to $4,368,991 results either from replanting or from packing in tin cans, and increases the value of the products to $13,438,852. This fishery employs 4,155 vessels, valued at $3,528,700, and 11,930 boats, valued at $708,330. The value of gear and outfit amounts to $712,515. The value of shore property amounts to $5,633,750. The total capital invested in oyster industry is $10,583,295. The actual fishermen number 38,249, the shoresmen, 14,556. About 80 per cent of the total yield is obtained from the waters of Chesapeake Bay.

Taking into account all those persons who are directly employed in the fisheries for a larger or smaller portion of the year, those who are dependent upon fishermen in a commercial way of support, and the members of their families, who are actually dependent upon their labours, it cannot be far out of the way to estimate the total number of persons dependent on the fisheries at from 800,000 to 1,000,000. Of the twenty-nine States and Territories whose citizens are engaged in the fishing industry, sixteen have more than a thousand professional fishermen. The most important of these States is, of course, Massachusetts, with 17,000 men. At present, the oyster is one of the cheapest articles of diet in the United States, and though it can hardly be expected that the price of American oysters will always remain so low, still, taking into consideration the great wealth of the natural beds along the entire Atlantic coast, it seems certain that a moderate amount of protection would keep the oyster seed far below European rates, and that the immense stretches of submerged land especially suited for oyster planting may be utilized and made to produce an abundant harvest at much less cost than that which accompanies the complicated system of culture in vogue in France and Holland.

Extract on the Close Season.

Among the favourite remedies for the protection of the oyster beds, the shortening of the season is a favourite measure, and it has many advocates. This remedy seems, at first sight, to be an effective one, but a little thought shows that it is, in reality, of no very great value. So long as the present oyster policy is maintained, it will be necessary to have a close season to facilitate the enforcement of other legal measures ; but as it is clear to every one that a good number of fishermen, working upon a bed for a short season, will do just as much damage as a lesser number working for a longer time, we cannot hope that laws to shorten the season will, in themselves, effect any great improvement in the condition of the beds. Thus, overfishing in November is, in this respect, just as bad as overfishing in May.

At any time before the end of May, the disturbance of the beds can do little harm, and the experience of the Connecticut oyster farmers shows that the thorough raking of the beds, just before the spawning season, is a positive benefit. The young oysters cannot attach themselves to dirty and slimy shells, and if all the sponges, hydroids and seaweeds could be dragged from our beds in April and May, and if the old decayed and slimy shells could be ploughed under, and covered with cleaner shells from below the surface, by dredging just before the spawning season, the fertility of the beds would be greatly increased, and there is, therefore, nothing in the nature of the oyster to demand the closure of the beds in April and May.

Enough instances have been given to show that the prohibition of dredging will not save any bed which can be reached with tongs, and as the dredge is a much more scientific, effective and economical apparatus than the rude tongs which it has superseded, there does not seem to be any reason why its use should be prohibited. In one way the use of dredges is a positive advantage to the beds. The dead shells which are found on an unworked bed are usually so covered with sponge, slime, and other substances, that they furnish no clean surface for the attachment of spat; and as dredging tends to turn up clean shells, to break up and scatter the clusters, and to tear away the sponges and other foreign bodies, it is a positive benefit to the beds; the teeth of the dredge take hold of the rank growth of the oyster beds, and by being dragged through them, loosen them and give them room to grow and mature properly; moreover, beds are continually increased in size, for when the vessel runs off the beds with the nets filled with oysters, the oysters and cultch are dragged off on ground where no oysters existed, and thus the beds are extended; and when the vessel is wearing or tacking to get back on the oyster beds, the catch just taken is being culled out, the cullings thrown overboard forming new cultch for drifting spat to adhere to. Many persons who do not advocate the total prohibition of dredging, believe that the size of the dredging boats, and the size and weight of the dredges, should be restricted by law. They give two reasons why the size of the boat should be restricted, urging that the large boats are able to work upon the beds when the police boats cannot venture out, and that their size permits them to use very large dredges, and thus catch great quantities of oysters.

It is asserted that the use of large dredges causes much evil, as they ruin the beds by crushing or smothering or burying in the mud more oysters than they capture; but the private farmers of Connecticut find it to their advantage to use much heavier dredges, and their farms improve under this treatment, although very heavy dredges are hauled by steam over the beds, even in the spawning season.

The cause of the exhaustion of the beds is because the demand has outgrown the supply. There are only two possible remedies. Either we must diminish the demand by killing the packing industry, which has created it, or we must increase by artificial means, the natural supply of oysters. The tongmen know that most of the oysters have been taken away by the dredgers, and they therefore advocate the prohibition or restriction of dredging. Ignorant of the fact that in localities where no dredging has been allowed the natural beds have been exhausted by tongmen, just as soon as a demand for the oysters sprung up; they believe that the prohibition of dredging is all that is needed to restore the beds. The dredgers, on the other hand, attribute the injury to the law which allows the tongmen to take oysters for private use in the summer, forgetting that the beds of Connecticut are rapidly increasing in value under a law which allows not only tonging, but dredging as well, all through the year. The small dredgers and scrapers hold that the larger vessels are destroying the oysters by the use of heavy dredges, although the Connecticut farmers find it to their interest to use on their own private beds far heavier dredges, which they drag over the beds by steam. Many of the oyster packers who carry on their business only in the winter, believe that all the damage is due to the oystermen who fish in March, April and May; and men who have money invested in the oyster business in Maryland believe that the exportation of oysters in the shell, and especially oysters for planting in northern waters is the cause of the mischief. We can hardly be surprised that our people should exhibit total ignorance of the true cause of the destruction when we recollect that there is not a single word in any of the laws of Maryland which indicates that our legislators are aware that the supply of oysters can be artificially increased, or that there is need for any such increase. It was suggested by Lieut. Winslow that a policy should be adopted similar in essential features to that of Connecticut. The fishery of that State is one of the few instances of recuperation on record.

Unnecessary Destruction of Young Oysters.

One explanation which has been urged to account for the destruction of our oyster beds is the wanton or unnecessary destruction of young oysters. Upon the piles of shells which are thrown out from the packing houses, great numbers of young shells can often be found. They are, of course, dead, and as they are too small to be of any use, their destruction is a clear loss to our people. It is impossible to prevent this from happening occasionally, as in many cases the little oysters are so small, and so firmly fastened to the old one, that they cannot be removed without destroying them. We believe, however, that in cases where great numbers of young are fastened to the large ones, the use or destruction of them at the packing house should be discouraged. This difficulty will disappear with the growth of the planting industry, for small oysters will then be valuable as seed, and they will pass into the hands of the planters instead of going to the packing houses. The true remedy, therefore, is the encouragement of planting, and if our people would develop this business immediately, all need for special legislation would disappear.

It has taken our people nearly two hundred years to discover that we cannot afford to destroy oysters in this way; we can hardly expect them to perceive that clean, empty shells are also so valuable that their use for lime, &c., should be prohibited One of the commissioners called attention to the very great value of oyster shells, and showed that a great increase of fertility would follow the return of the shells to the waters of our bay.

The preservation of the oyster beds, Professor Goode regarded as a matter of vital importance to the United States, for oyster fishing, unsupported by oyster culture, will, within a short period, destroy the employment of tens of thousands, and the cheap and favourite food of tens of millions of citizens.

Oyster Planting.

Oyster planting is the placing of small or "seed" oysters upon bottoms which are favourable to their growth. Planting also adds very greatly to the value of oysters, as they grow more rapidly, and are of better quality when thus scattered than they are upon the natural beds, and Ingersoll quotes the statement that $13 worth of small "seed" oysters yielded, after they had been planted for two years, oysters which were sold for $114, besides about thirty bushels, which were used as food by the planter's family. Oyster planting can be carried on only on private grounds, and it cannot flourish in a community which does not respect the right of the private owner to the oysters which he has planted.

The industry does not require a large capital, and it can be carried on with profit on a very small scale, although the oysters need constant and intelligent attention. In all places where it has been employed it has greatly added to the prosperity of the communities which have engaged in it, and has greatly increased the population of the shores along which it has been encouraged and protected.

Private Culture.

The history of French oyster culture is of very great interest in this connection. Nearly twenty-five years ago the French Government undertook the cultivation of oysters, in order to restock the exhausted beds. The Government farms were at first very successful, and they not only proved that oyster farming is very profitable, but they also served as a school for the instruction of the public in the methods of oyster culture. This example was followed by private cultivators, and the private industry upon the French coast is now in a very prosperous condition; but a government report (Oyster Culture in Morbihan) upon the subject; in 1875, contains the statement that "the worst merchant in France is the state." The state lacks that powerful lever called individual interest. An occupation is not possible unless an assured profit may be realized from it. The merchant alone can be certain of this, from a study of the markets and the demands of the consumers. The poorest merchant in France is the state. The state has quite another part to play. Charged with the protection of all, it cannot descend from this elevated sphere of general usefulness into the arena where opposing interests of commerce are contending. We do not wish in any way to diminish the gratitude due to those whether functionaries of State, or others who have laboured for the creation and development of this industry; but we feel the necessity of proclaiming in a certain measure the omnipotence and vigilance of individual interest.

This industry has paid a profit of not less than 100 per cent annually upon the capital invested in the business, while money thus invested in other states has paid an annual interest of more than 200 per cent.

One firm laid down 250,000 bushels of shells. Several large growers have laid down as many as 200,000 bushels each. A still larger number have scattered a hundred thousand, fifty thousand, and twenty thousand each. There are about thirty steamers engaged in the business, besides a very large number of sailing vessels. It does not admit of a doubt that the business of oyster growing, as carried on in the waters of the sound is exceedingly profitable.

With regard to transplanting the oyster and its transportation, all experienced persons were of the opinion that delicacy in handling, and freedom from jars, concussions and shocks of any kind, were desirable. Oysters, when under hatches, have very frequently been killed by heavy thunderstorms and firing of guns. Any concussion or sudden shock will prove destructive, if they are in a confined space. Oysters taken up during the summer are much more susceptible to injury from this cause than those obtained during the winter.

Oysters are transplanted at any and all seasons, but generally in the spring and autumn.

Results of Leasing Areas.

Before the inception of the examination of the oyster area of the State, the industry was not only insignificant, but had every prospect of remaining so. The examination and survey have directly or indirectly entirely changed this condition of affairs. When widespread ignorance as to the real condition of matters existed in the past, intelligent comprehension of all phases of the question is found in the present. In place of ignorance of the positions and areas of the natural beds and possibilities of oyster culture, is a general diffusion of knowledge on both subjects. Instead of continual strife among those who worked the common and those who worked the private beds, there is practically general harmony. Where, under cover of law, robbery of the common property was carried on by one class and depredations on private property by the other, now exists a complete restriction of both. The rights of the public and of the individual are equally protected.

In place of what was virtually discouragement of enterprise in this field, is now liberal encouragement to all who will venture labour or capital in the development of the area. Instead of an insignificant business, yielding little to the individual and nothing to the State, a new industry, promising wealth and prosperity to the individual and increased income and importance to the State, has begun its existence; and, finally, confidence in the future may be substituted for the fear of disaster to the greatest of American fisheries.

The Chesapeake beds may and probably will be destroyed through the excessive and illegal fishing they undergo; the oyster farms on Long Island Sound may continue their struggle with star-fish and inclement weather—with the ravages of man and nature; but so long as North Carolina holds open her hundreds of thousands of acres of territory to the cultivator, the oyster industry of the country, employing its thousands of people and its millions of capital, cannot perish.

The Fishery and its Effects.

An extract from Lieutenant Winslow's report: "The oysters are removed from the beds in the James River with the tongs alone, no dredging being permitted, and this may account to some extent for the beds being made up of patches and ridges of oysters. This formation is only advantageous in so much as it assists the rapidity of the current, and, in all other respects, it is an evil. Beds such as Cruiser's Rock, Nasemond Ridge, and Point of Shoals, when the oysters in places are too thick, would be much improved by using a light scrape or dredge, instead of the tongs in the fishery. If used with moderation, the surface of the bed would be cleaned, its area extended, the oysters would be more evenly distributed and allowed more room for development, and the spat, having a larger and cleaner amount of "cultch exposed, would probably attach in greater numbers."

Information given by Oystermen.

The cause assigned for the deterioration, and even the admittance of the fact, depended very much upon the occupation of the informant. The tongers, or those who pursued the fishery with tongs alone, were unanimous in laying the deterioration to excessive dredging, while the dredgers, or those owning pungies or other vessels employed exclusively with the dredge, while they admitted the decrease in the number of oysters, laid such decrease to the action of natural and unexplained causes, arguing that the evident extension of the beds and improvement of the oysters, due to dredging, was sufficient to prove its good rather than its ill effects.

With regard to the depth of water and character of bottom, shallow water was preferred, and sticky mud, or mud and sand, about six inches in thickness over a hard substratum, was considered the best, though a larger amount of mud did not matter, provided it was not so soft as to allow the oysters to sink in it, and had a strong current over it.

The oysters were said to feed on the flood tide, having their bills open then and at no other time. No one had noticed any enemies or animals that preyed upon the oysters, and all semed ignorant of the drills and their destructive effects.

The oysters are "culled," that is, they are separated from the old shells and other débris, while the boat or vessel is on or near the bed. Everything except the oyster is thrown back, sometimes striking the bed and as often the mud. The young oysters, under a year and a half in growth, and less than two inches long, are also thrown back.

All persons interrogated were of the opinion that at least 75 per cent of the oysters on a bed are taken off each year, and that no more than 50 per cent should be removed.

The spawning season was said to be from May until August, inclusive, though most of the spawning was done in June and July. All opinions coincided that the oyster in shoal water spawned first, but different as to whether, the depth being the same, all oysters on the same bed spawned at or about the same time, as many being for as against the theory. Currents were said to have no effect upon the spawning. Oysters of one year's growth, three-fourths of an inch long, have been seen with the spawn in them, and oysters on natural beds were thought by the majority to spawn sooner than the planted ones, though there was not much difference. Oysters transplanted with the spawn in them, however, will cease spawning. A wet or warm spring would hasten the time of spawning, but would not shorten its duration.

The young were supposed to "strike" every three years, though there was but little regularity about it, a bed sometimes running for ten years with a young growth on it every year, and then failing to produce anything for two or three years. Sometimes one part of the bed will be covered by young and another totally barren.

The difference in time of spawning, in shoal and deep water, is probably due to difference in temperature, the deeper water naturally being of the lowest. The establishment or the refutation of this supposition, as also that of the difference of the times of spawning is very necessary, especially of the latter, as it would afford a sure basis for such legislation for the protection of the beds as will soon be necessary. Mr. Rice, in searching for spawn in the oysters during the latter part of August and first part of September was unable to discover any except in those from deep water, and that fact, together with the inference drawn from preceding paragraphs, leads me to believe the oystermen are correct in stating that there is a difference in the time of spawning of the shoal and deep-water oysters.

CANADIAN OYSTER INDUSTRY.

The preceding general description of the methods used in some of the European countries, and in different parts of the United States, serve as a sufficient model or example of what has been done, and also the business which might be developed in the waters of the maritime provinces and British Columbia, if capital and energy were brought to bear upon this valuable branch of the fishing industry.

During my visits of investigation in New Brunswick, Prince Edward Island and Nova Scotia, I have found, among the people there, an evident desire to learn everything relating to the culture of oysters, and I have no doubt that with the material assistance which this department is prepared to give to those willing to embark in this business, the day is not far distant when the whole coast of New Brunswick and Nova Scotia, from Caraquet to the Strait of Canso, including the waters in the island of Cape Breton, as well as the shores of Prince Edward Island could be made to yield a handsome revenue to the provinces, while being of no small importance to parties desiring to engage in this lucrative business on their own account.

Up to the present time very little attention has been devoted to the private or artificial cultivation of oysters upon reserved areas. We must consider the area of the public beds, the fishermen that fish upon them, their rude modes of fishing, the reckless way in which the beds have been destroyed by cutting them to pieces during the winter months by means of mud diggers, worked by horsepower (the contents of which are transferred to farms and utilized as a fertilizer on their lands), the fishing for oysters through the ice during the winter months (which, I am pleased to say, has since been stopped), all helping to deplete the beds (as the young and immature oysters being left on the ice to freeze and perish through the severity of the weather); the indiscriminate and illegal fishing, everything in the shape of an oyster being carried on shore, irrespective of size. All this has been carried on for years, it is no wonder then that complaints are received of areas becoming exhausted and unproductive, or that they cannot stand the strain which is brought to bear upon them, that areas are becoming smaller in size, and in many cases are entirely mudded over, choking and killing the few remaining oysters that were on the beds. The methods used in taking oysters are with single-handled rakes, and tongs ; dredges are very little used.

Oysters being a valuable article of food, are the means of bringing large sums of money to the districts where they are grown, caught or cultivated. As our areas are gradually being fished out, it is for us to take steps to prevent their extinction, if possible. Now that there are such facilities for the transit of perishable goods, the demand is far greater than the supply, hence one of the chief causes of overfishing. Being public grounds, every fisherman considers he has a right to fish while there are oysters to be caught, so that the stock left on the grounds for breeding purposes, in some instances, is very low. The only way to avoid this, is by granting leases or areas to resident applicants for the cultivation of oysters under their own care. These private layings will be watched, guarded and improved. The public areas would not be so heavily fished upon, and if small ones were taken from them, it would be to transplant them to a private bed, instead of being added to the pile of dead oyster shells, of which so many are to be seen around the packing houses and landing places, no one caring what becomes of them, although they are one of the chief causes of exhaustion of the beds, which, if left on the fishing grounds, would become the very backbone of the oyster industry.

Speaking of public oyster fishing areas, it is seen that with few exceptions the beds are gradually but surely becoming depleted, as every one considers they have a right to fish, and no one cares to try and improve the beds, for if one person attempted to do so there would be one hundred that would do just the opposite. Under ordinary conditions, each natural oyster bed is able to yield a certain number of oysters each year, and whenever this number is taken in excess the beds suffer, and if the practice is continued it must eventually be destroyed. To restrict the fishery to any great extent would, in effect, deprive many of the poorer class of people of a portion of their substance and means of livelihood, neither is it necessary beyond the actual close time, except in extreme cases, to do so. My impression is that the general effect of a lengthened close season is simply to gather the oyster fishermen upon the beds in greater numbers than ever at the opening of any particular area that has been reserved. No mere restriction of the fishing can possibly accomplish the desired object, and it is only a matter of time before the end comes.

The following regulations, if carried out, no doubt would materially assist this branch of the fishery; they were passed by Order in Council, dated 28th day of December, 1893, and are as follows:—

1. No person shall fish for or catch oysters without a lease or license from the Minister of Marine and Fisheries.

2. The owner, person, or persons interested in a fishing boat employed in the oyster fishery shall cause a memorandum in writing, setting forth the name of the owner, person, or persons interested to be filed with the local fishery officer, who, if no valid objection exists, may, under instructions from the Minister of Marine and Fisheries, issue a fishery license for the same, and any boat or fishing apparatus used without such license shall be deemed to be illegal and liable to forfeiture, together with the oysters caught therein, and the owner or person using the same shall be subject to the penalties prescribed by the Fisheries Act.

3. All boats fishing for oysters shall have a registration number corresponding with that of the license legibly marked or painted on the bow of the boat, in white coloured letters on a black ground, and the initial letter of the port to which such boat belongs, such letters to be at least eight inches in length.

4. Oysters shall not be fished for, caught, killed, bought, sold or had in possession, between the 1st day of June and the 15th day of September, in each year, both days inclusive.

5. Fishing for oysters, or any other shell-fish, through the ice is prohibited.

6. No person shall fish for, catch, kill, buy, sell, or have in possession, any round oysters of a less size than two inches in diameter of shell, nor any long oysters measuring less than three inches of outer shell.

Round oysters of a less size than two inches in diameter, and long oysters measuring less than three inches on the outer shell that may be accidentally caught, shall be returned to the water alive, at the cost and risk of the person so fishing, on whom, in every case, shall devolve the proof of actual liberation.

Provided always, that persons holding fishery licenses may obtain from the Minister of Marine and Fisheries, permission to fish for and catch small oysters for the purpose of planting, or stocking oyster beds.

7. Fishing for oysters is prohibited on Sunday, and from sunset to sunrise on any other day of the week.

8. No person shall dig mussel mud within 200 yards from any live oyster beds, and then only at such place or places as may be prescribed in writing by a fishery officer.

9. The use of rakes for the purpose of taking oysters on any beds prepared or planted by the Department of Marine and Fisheries is prohibited.

Oysters will find a resting place on various kinds of soil; they are to be found on rocky and stony bottoms, attaching themselves to twigs and branches of trees that may be lying in the water, or any other hard, clean substance. The oyster is also found on shelly and muddy bottoms. It will live and thrive in mud as long as it is not too soft to become entirely buried, and has free access to running water. Such oysters are generally long and irregular in shape, with a soft chalky shell, while an oyster taken from a firm bottom will not, as a rule, be so large, and the shell is composed of a harder substance; such is more regular in shape, especially when found singly. Oysters that grow in clusters are chiefly found on areas where there is a lack of proper cultch, and naturally attach themselves to each other. If these areas were dredged upon, it would loosen the sediment which would be carried away by the tide, cleanse the shells, remove the weeds and extend the area, which would be much cleaner than it is at present, as the oysters are fished with a rude kind of rake, which contracts rather than extends the beds.

If all our oyster areas were divided up into private holdings, the whole could be watched, its condition and capacity much more carefully and exactly ascertained, than can ever be the case under State management, and an enlightened system of private cultivation would be the most sure safeguard against the exhaustion of the beds.

The only obstacle in the way preventing the development of such an industry among us is the existence of the sentiment that since the oyster grounds belong to the whole people, they are not in a proper field for private labour and industry. Fish have always been regarded as common property, because it is not within the power of individuals to improve them, or increase their numbers or value, but this is not true of oysters. An oyster is as subject to improvement by cultivation as a garden root, and the cultivation of oysters is therefore a perfectly proper and legitimate employment for capital and labour, and the common right to the beds must in time give way to private enterprise, just as surely as the common right to the natural products of the soil has given way before the progress of civilization. Such a change as this cannot be brought about rapidly without causing imaginary hardships or ill-feeling, and it is therefore best that it should come slowly, but the common right to all our people to the use of the oyster beds is a very different thing, from the right of a portion of our people to exterminate the beds ; and since it is plain that the interests of the whole people demands an immediate change in our oyster industry, steps should now be taken to render possible the growth of our oyster farming industry in the future.

Theoretical oyster culture seems so simple, that the wonder is there are so many failures at it. When we come to put our theory into practice, we begin to find how many local circumstances there are, apparently trifling in themselves, which really exert a powerful influence on our calculations ; and it is only by many years of watchful observation that any one can acquire sufficient experience to be able to understand, and cope with the numerous difficulties which will beset the path of an oyster grower. If, however, we were asked to sum up the principles of oyster culture in as few words as possible, we should say : Keep your cultch clean, keep down the vermin, separate from the collectors as soon as possible, protect from frost during the winter, keep the oysters quiet during the spatting season, and hope for warm, calm and settled summer weather.

I will now deal chiefly with grounds that would be kept and attended to by private culturists, as I believe the above course is the only hope for the oyster consumer to secure his stock. As the grounds are now so overfished it must be plain to every one that the supply of oysters in the future must rest entirely upon the products of private enterprise rather than from public areas With this end in view, the Department of Marine and Fisheries have for the last few years granted areas of ground covered with water, or foreshores, in the form of a license or lease to persons applying for areas where no actual oyster fishing is carried on, that is, where an oyster fisherman can obtain a livelihood, such areas are reserved for the public, but where a bed has become depleted through overfishing, overgrown grass or weeds, mud, or other causes, such areas can be applied for, or areas where no oyster fishery ever existed, leases have been issued on application and on payment of $1 per acre per annum, payable in advance, the applicant paying all charges for obtaining plan and surveys, &c. The forms of application were as follows, with regulations to guide surveyors in preparing plans and descriptions for applications for oyster fishery licenses.

APPLICATION FOR OYSTER FISHING PRIVILEGES.

To...

....189

The undersigned hereby applies for a License of Oyster Fishery Privileges at........ in the County of............., Province of............, covering the following limits, as shown on a plan of survey accompanying the present application :—

(Here insert description of limits, by metes and bounds, showing connection with previous surveys made, or with some well-defined boundaries on shore. All surveys to be made by a duly licensed surveyor, in accordance with the printed regulations issued by this Department.)

Signature of Applicant or Applicants......................

REGULATIONS to guide Surveyors in preparing Plans and Descriptions for Applications for Oyster Fishing Licenses.

(1.) All surveys of Oyster License Limits are to conform to the largest scale Admiralty Chart published, of the harbour or locality to which the application refers. Such Chart can be seen on application to the Fishery Overseer of the District in which the limits are situated.

(2.) Boundaries are to be fixed by reference to well-defined objects marked on the Charts, or by any Surveyor's boundaries already existing, but in these last cases, the Surveyor's boundaries must be defined for platting on the Chart by reference to points marked on the Chart, so that they can be accurately located by the Officers of the Department from the Surveyor's description.

(3.) Where surveys are bounded by lines, these lines must be due astronomical east and west and north and south lines.

(4.) The extremities of any lines, or other boundaries, when on land, must be marked by monuments in accordance with the law governing land surveys.

(5.) The boundaries of lots, when in water, must be so defined that they can be easily located at any future time. Satisfactory definitions would be two cross ranges on land, separated by an angle of at least 60 degrees, with the objects in range defined on plan, or at least three sextant angles, each of not less than 40 degrees, measured to four prominent objects on shore shown on the Chart. Compass bearings alone, unaccompanied by any other check, will not be accepted.

(6.) A plan of the survey must be furnished, which is to be made on the basis of the Admiralty Chart of the locality, as above mentioned, either on the same scale or some multiple thereof, or it may be platted upon a printed copy of the Chart. On the plan, all boundaries, distances, bearings and connections, with reference points, must be distinctly shown, and an error, clerical or otherwise, will condemn the whole survey.

(7.) The plan must be accompanied by a description giving the metes and bounds of the lot and its area in acres, in such terms as would, in the case of an ordinary land survey be held in a Court of Law, to be a legal description for a title deed.

(8.) In the event of previous surveys having been made in the same locality, the plan is to show the nearest boundaries of such surveys, and their relation to the new survey.

After the application and plan are complete it is submitted to the inspector of fisheries for transmission to headquarters, with his report of the area in question, and if approved of by the department, a form of license is made out in his favour for a period of nine years, on a form similar to the following:—

OYSTER AREA FISHERY LICENSE.

No............

Dominion of Canada,

Province of..............................

Special Fishery License issued under authority of Sec. 21 of the "Fisheries Act."

18....

The herein named......................., resident of.........................., County of..........................., in consideration of the payment of the annual sum of...................Dollars, is hereby licensed for the term of..........years, to plant and form Oyster Beds and to Fish for Oysters within the following waters, that is to say:

(Full description of limits given.)

The present license is granted under the following conditions:—

1. That the Licensee shall use and apply the privileges hereby granted for the planting, breeding, culture, production and fishing of Oysters, and uses connected therewith; and for no other purposes whatever.

2. That the Licensee shall, at the expiry of each year, make a return verified by statutory declaration, showing :—1st. The number of Oysters planted ; 2nd. The number taken ;. 3rd. The number exported ; and 4th. The number sold in Canada each year under the present License.

3. That the Licensee shall neither concede, nor transfer, any interest in the present License, without the written consent of the Minister of Marine and Fisheries, or other person or persons duly authorized by him to such effect.

4. That the boundaries of the waters covered by the present License shall be marked by the Licensee with suitable stakes and buoys, and with the number of the lot plainly marked on the north-west stake or buoy.

5. That in default of payment of the annual rent or any part thereof $............. yearly, in advance, the present License will become null and void.

6. That should the Oyster bed hereby licensed not be, in the opinion of the Minister of Marine and Fisheries, properly cultivated or protected by the Licensee ; the privilege hereby granted will be forfeited.

7. That the Licensee shall, at the expiry or determination of the present License, deliver up the possession of said privileges without any claim to remuneration or indemnity

8. The Licensee shall not interfere with the operations of fishermen within the limits so leased who may be lawfully engaged in fishing for or catching any kind of fish other than oysters.

9. The present Licensee shall strictly conform with the various provisions of the Fishery Acts now (or hereafter) in force, and with all Regulations made by the Governor General in Council, and with all the written or printed Directions he may receive from any Fishery Officer ; and in default of compliance with the same or any of them, the License will become void, and forfeited forthwith. The Licensee shall, however, nevertheless remain liable for any penalties that he may have incurred by violating the law.

For Minister of Marine and Fisheries.

Countersigned and dated at.............this............day of.........189

.................................*Fishery Officer.*

After having secured a license for an area, the next step is to commence operations on this marine farm. The first thing is to ascertain the nature of the bottom, if it is clean, or dirty, hard or soft, even or uneven. If dirty, it should be dredged over and cleaned. the weeds, if any, should be removed and the bottom made as even as possible. Should the area consist of an old depleted bed, the turning over of the old shells will greatly benefit it.

In planting oysters no hard and fast rules are given. If oysters are found to thrive in certain waters, it is as well to continue cultivating them on the same area.

Great care should also be taken to plant oysters in a sufficient depth of water to protect them from frost and ice during the winter months, upon a firm bottom, of from 4 to 6 feet depth at low water time in sheltered places. Deeper water would be advisable where areas are more exposed to the weather, on account of the ground swell breaking upon the beds.

As to the working of oyster beds, an eminent authority has said it is utterly useless to enclose a piece of ground and simply plant it. It is also useless to throw a lot of oysters down among every state of filth. One must keep constantly dredging, not only the bed itself, but the public beds outside, so as to keep the bottom fit for the reception and growth of the young oysters, and free of its multitudinous and natural enemies. An oyster ground is naturally dirty in the summer. Seaweed grows rapidly in hot weather. Weeds collect mud, and consequently, as the summer advances, the grounds become dirtier and dirtier.

I will now give an explanation of the dredge and its uses in oyster culture.

Oyster Dredges.

In preparing grounds for cultivation, the main object is to have a clean area to begin with. The most efficient, effective, and economical method in this case is the use of the dredge, which is a triangular shaped instrument, consisting of a bit or rake nearly three feet long, made of flat iron about two inches in width and set at an angle so that it comes in contact with the ground, behind which a small bag-net is fitted, and made to hold about a bushel, this will receive and collect all the bit of the dredge has turned over. The sides of the bit are joined to two pieces of iron about three feet six inches long and welded together at the upper end to which a ring is fitted, a rope is attached to this ring, and in this way it is towed and brought to the surface when required. It is also strengthened by a piece of iron running from the ring down the centre two thirds the length of the sides, and connected by a cross piece of iron holding the two outside limbs in their place which strengthens the frame considerably ; to it also is secured the upper side of the net. The bag or net, is so constructed that the lower or underneath side is generally made of iron or galvanized wire rings and made into a netting, because there is more wear on the lower side, as it is dragged over the bottom of the ground, and most of the weight of the contents lay on that side, while the upper side is an ordinary piece of common netting made with strong twine, this being much lighter, it fills out forming an open-mouthed bag by the action of the water running through the meshes while the dredge is being towed over the grounds. The lower end of the bag is kept square by means of a stout stick attached to both the lower corners, this keeps the net from fouling, and also acts as a handle when emptying the contents of the dredge on deck. The dredge is towed behind a steamboat or from the weather side of a sailing boat, the boat being allowed to fall to leaward and forge ahead slowly, the length of rope being regulated from the deck, by the depth of water the bed is lying in, speed of the boat, and the conditions of the weather. After a little practice it can easily be ascertained whether the dredge is full or empty, or is catching anything or not, by feeling of the dredge-rope, if everything is satisfactory, a strong vibration is felt on the rope as the dredge is being dragged over the bottom and the weight is found to increase, sometimes the boat is going too fast, or the line may be too short, and the dredge does not even touch the bottom, this is called swimming the dredges, and can only be adjusted and regulated by practice, both as regards the speed of the vessel or the length of rope.

Where dredges are worked by hand it is not desirable to have them made too heavy, it would be a greater advantage to work two lighter ones than one heavy one ; and that fault alone would often prejudice many persons against their use. The iron frame-work of a dredge weighing about 20 lbs. is a very fair weight for a hand dredge. The lighter the line the better it will fish as there is not so much resistance against the water. The result is that the dredge is towed lightly over the beds, collecting all surface shells, stones, weed, oysters, brood or any other substance or matter that lies in its way. If oysters have been planted, or are laying on the area, they are caught much faster than by the ordinary methods now in use in this country. Large quantities of oysters may be caught in the course of a day from a well stocked bed, by the use of the dredge, a large item would be noticed in the course of a season in the way of saving labour, it being far more economical and satisfactory to use a dredge than any other implement or method. It also disturbs the sediment or silt which is naturally carried away by the currents, and the result is the grounds are cleaned while the oysters are being caught for market, it keeps the areas level and if the shells are old and decayed they may be removed to the outside edges of the bed, the dredges are sometimes towed to the extreme length or breadth of the cultivated area or even beyond it, the shells and refuse often being thrown overboard outside the edges of the bed, and if this is continued it can easily be seen that the beds must become more extensive, and the result is that by the use of dredges the beds are increasing in size, while the methods now in use are of no value whatever in cleaning or keeping an area in order, and only tend to contract rather than extend the beds as is the desire of any one wishing to make an improvement and success on anything that is undertaken.

Oysters and other kinds of shellfish can be taken by this method in any depth of water. Oysters are thus caught from the beds at Whitstable, England, where they lie in about six or seven feet at low water, there being a rise and fall of tide averaging about twelve feet. They are also caught in the North Sea off the Dutch coast in from twenty to thirty fathoms of water, and other places where the depth varies from one to thirty fathoms. The shape and weight of the dredge varies with the locality and nature of the bottom where the fishermen intend working ; a dredge is made much heavier and wider for deep water than for shallow water, and dredges vary in weight from twenty to eighty pounds and upwards.

All those persons who have used oyster dredges in this country speak very favourably of them. I am certain that when the dredge is once fairly introduced and its merits thoroughly tested, it will supersede both the rake and tongs, and open up a new feature in the private cultivation of oysters.

Dredges are also used in England to obtain the whelk, which is used as an article of food and also a valuable bait for cod-fishermen. It is likewise used to catch mussels and starfish, utilized by the farmers as a fertilizer, and quite a number of men find employment in loading their boats with them for the different markets.

The Soil.

Oysters cannot thrive where the ground is composed of moving sand, or where mud is deposited ; consequently, since the size and number of these places are becoming very limited, only a very small percentage of the young oysters can find a resting place, and the remainder perish. By putting down suitable cultch immense quantities of the wandering spat (or fry) may settle on it, and thus be saved. As a rule, the natural beds occupy most of the suitable space in their own vicinity. Unoccupied ground may, however, be prepared for the reception of new beds, by spreading sand, gravel and shells over muddy bottoms, or beds may be kept up in locations for permanent, natural beds, by putting down oysters and cultch, just before the time of breeding, thus giving the spat a chance to fix themselves before the currents and enemies have had time to destroy them.

The simplest form of oyster-culture is the preservation of the natural oyster-beds. Upon this, in fact, depends the whole future of the industry, since it is not probable that any system of artificial breeding can be devised on these shores, on account of protecting the seed during the long winter, which will render it possible to keep up a supply, without at least occasional recourse to seed oysters produced under natural conditions. It is the opinion of almost all who have studied the subject, that any natural bed may in time be destroyed by over-fishing, by burying the breeding oysters, by covering up the projections suitable for the reception of spat, and by breaking down, through the action of heavy dredges, the ridges which are specially fitted to receive the future spat.

Professor Huxley quotes : "As regards the future of the oyster industry in Great Britain, the only hope for the oyster consumer, lies in the encouragement of oyster culture, and in the development of some means of breeding oysters under such conditions that the spat shall be safely deposited."

Great care should be taken of the spat, as the older it is, the hardier it becomes, and if the young are saved the future may be looked forward to by reaping a good harvest. The living and dead shells of the adult oysters furnish the best surface for the attachment of the young, and for this reason the points where oyster beds are already established are those where the young have the most favourable surroundings and the best show for life. The beds thus tend to remain permanent and of substantially the same size and shape. It is well known that shell fish of all kinds thrive best where the supply of lime is the greatest. The dead oyster shell is soon corroded and in a few years almost entirely dissolved by the seawater, and I think this fact is another reason why the young oysters thrive best on a natural bed. How far the supply of oysters is limited by the supply of lime, it is impossible to say, but when we recollect how important it is that the young oysters should soon find solid bodies to fasten themselves to, and that they should protect themselves by strong shells of their own as quickly as possible, it will be seen that the danger of exterminating a valuable bed by overdredging would be much less if the empty shells or cultch were replaced on the beds.

Cultch is the name given to the debris of shells, stones, &c., which are found at the bottom of the sea, on or near oyster beds. It has been the practice from time immemorial to supplement the natural supply by throwing down deposits of this sort on oyster grounds. Oyster and cockle shells make the best material for this purpose ; in default of this, stones and pebbles may be used, the great point being that the cultch, whatever it is composed of, should be clean, and for this purpose the shorter the time it is laid down before the spat falls the better.

Shells may be collected from oyster saloons and deposited near the shore, exposing them to the weather, the sun and rain, frost and snow will have the desired effect upon them, they will be thoroughly cleansed of all organic or other matter, and when laid upon the oyster beds are excellent spat collectors, they also serve to make a firm foundation in extending an area if required by the planter. Or they may be obtained from oyster beds taken in the dredge when fishing for oysters and laid on shore in heaps until required for use, or when enlarging an area may be deposited there each day as they are caught according to the discretion of those who have charge of the work.

Whenever the natural conditions will admit of it, the yielding capacity of an oyster bed may be increased by improving and enlarging the ground for the reception of the young oysters. The natural banks should be improved by removing the mud and seaweed with dredges, also by scattering the shells of oysters and other molluscs over the bottom. When circumstances will permit, all vermin which are taken in the dredge, which kill oysters or consume their food should be destroyed ; in England this collection is generally used as a fertilizer upon the fishermen's vegetable gardens, thus it is a benefit in two ways, by removing them from the oyster beds and placing them as manure upon gardens.

After an area has been prepared the next step is to stock it, and it has often been observed that the removal of oysters from one ground to another has the general effect of improving both their flavour and size The spring of the year, before the hot weather sets in is the best time for planting. By placing the oysters in shallow water during the spring and summer months, they will grow much faster than if placed in deeper water, as the sun causes the water to become much warmer, the oyster being very sensitive to the action of light and heat which promotes a rapid growth. Oysters planted in the autumn are not so likely to thrive, as owing to the change of soil and falling temperature, the oyster is not properly climatized before winter sets in, which very often proves disastrous. Oysters grow but little during the winter months, with the exception of getting thicker, consequently it is all risk or loss with little or no gain although there are exceptions in every case. Young oysters taken in the spring will have survived the winter, the change of water and temperature becoming warmer, gives the oyster every chance to live and grow.

In obtaining the necessary quantity of oysters for planting purposes extreme care should be taken of securing them in a fresh condition, and if time will admit of it, to overhaul these oysters and brood very carefully, and if they are found to be in clusters they should be separated as much as possible either from other oysters, shells, stones, or anything else they may have adhered to. This separation gives the oyster a better chance to grow into its natural shape, as oysters grow much better singly than when in clusters or bunches. In securing the stock the size of the oyster should be considered, for which I give the following reasons : Small or young oysters planted on a bed are preferable, as their growth alone will result in large proportionate returns and profit. A young oyster is not so likely to die when transplanted to another bed, as when older, nor is it any advantage to transplant a full grown oyster unless for immediate use. In the oyster trade of this country one great advantage is the rapid growth of the bivalve, when as is the case here, they are bought and sold by measure.

Time may also be devoted when cleaning an area, or catching the stock for market, to separate any small oysters that may have attached themselves to full grown oysters or shells that have been brought to the surface in the dredge with other cultch, and in this way a person is always improving his own grounds which he will soon find out to his advantage. Experiments have been made by the department with depleted beds at Shediac, N.B. The areas there have been cleaned and restocked with young oysters. which have grown very fast, are full of life, and on several of the oysters and shells there are traces of spat, from the smallest size up to the full-grown bivalve ; the ground being clean and of healthy appearance. On one portion of the bed oysters were planted from Curtain Island, P.E.I. These oysters have grown very much more than those which were obtained from Buctouche or Cocagne, although the latter are in splendid condition.

The wealth within the reach of our people and their descendants, from the oyster grounds in our waters is almost beyond belief, and it is not too much to affirm that their money value is more than equal to that of dry land.

Temperature of the Water.

During the time whilst engaged in the provinces, I paid strict attention to the temperature of the water, and see no reason why there should not be a spat fall each year. if the grounds are in a suitable condition. The temperature gradually rises during the summer months until it reaches about 70 degrees, when it as gradually falls, giving ample time for the spat to become attached to any object, and start growing before the winter sets in. The waters in the bays and rivers are admirably adapted for the cultivation of oysters in that respect. In the annual report for 1896 I have submitted a table showing temperature, place and date, for three successive years.

Close Season.

The close season is at present from 1st June to 15th September ; while this is against the popular notion that no oysters should be eaten during the months without an R, I think the dates are well chosen. In Ireland, the close season extends from the 1st May to 1st September, but the Fishery Commissioners have power to alter it ; and have exercised such authority in numerous instances. In England, the close season is from 14th May to 4th August, which often proves to be the hottest month of the year. No doubt, the 1st October would, in some ways, be preferable in Canada ; but the season, now that winter fishing is prohibited is already so short, lasting a little over two months and a half, that it would seem very hard to further curtail it. If the weather gets warm in the latter end of September, it is the shipper's business to use his judgment in sending oysters to market. That is one great advantage of a person holding a license for an area of oyster grounds ; he can meet the demands of the market without overstocking it, by sending the best quality and size, leaving his small ones to develop into full-grown oysters.

In the first place it is imperative that whatever close time is required shall be honourably and conscientiously observed ; as there is nothing to be gained by supplying oysters to the public during the summer months. If oysters are caught for market during these months, the grounds would be disturbed, the supply of breeding oysters lessened, and it would be impossible to calculate the amount of death and injury caused to spat, young brood, and immature oysters, by securing a small quantity of oysters in order to satisfy the palate of a few fastidious persons who are entirely ignorant of what they are eating. The close season should be as well observed, not only as far as the oyster is concerned. regarding its breeding qualities ; but at that period it is really not in a fit condition to be eaten, and fatal cases have been reported through eating oysters during the hot weather.

I may also state that it is just as injurious to fish oysters through the ice as it is during the hot weather and spawning season. Where this practice has been carried on, as has previously been done on most beds, heaps of refuse, consisting of dead shells and mud are found ; large numbers of dead young oyster shells are also found bleached by exposure ; the loss of oysters in this way must have been enormous. Where the ice does not actually rest on the beds it has the practical effect of protecting the oysters from changes in the temperature. This has proved to be the case in Ostend, Belgium. where the oyster parcs happened to freeze over. Originally they were always breaking the ice, thinking it might hurt the oyster to be frozen over, but they suffered great mortality; upon being advised to let the ice remain they found scarcely any death among them, and have since that time always allowed their parcs to freeze.

Frost sometimes congeals the shells together, and the oyster dies from starvation. Shells have been opened and the oysters found enveloped in ice. In this state, though dead, it is perfectly good, if eaten at once, but when thawed the dead oyster quickly becomes putrid. In winter, after a thaw, snow water comes down the rivers, increasing the volume of fresh water which sometimes causes great mortality to the oysters.

It is a very noticeable fact, although one might think that under water the weather would make no difference to the ground, but such is not really the case. It is only when the weather is mild that the soil below the surface of the water becomes loose and soft, and in these places oysters and brood are often taken, but when the weather becomes cold the ground becomes close and hard, and oyster brood cannot be taken at all in the very same place where it was taken previous or just after the cold weather. This is another example that it is injurious to work too much upon the beds during the winter months.

It has been noticed that during the last few years oysters have been taken in very fair quantities from the river flats and areas that dry at low water, but these areas are not always to be depended upon in their yield, as they are placed in such an exposed locality, being subject to the frost. It makes a great difference when the frost sets in on areas such as these, if the frost comes with any force during spring tides when these areas dry at low water it is nearly always fatal to the oyster, if on the other hand the ice makes during neap tides and remains, it acts as a covering and protection to the oysters, and when the ice actually rests upon the flats the soil is sufficiently soft to allow the oyster to be pushed into the mud until the ice rests on the whole area, in such cases the oyster will live, but where the oyster is exposed to the frost by low tides and heavy winds, the oyster itself becomes frozen, which means certain death, especially to the half-grown ones. This was particularly noticed on the flats at Davies Point, Orwell River, P.E.I., covering an area of about seven acres; in 1896 over 1,000 barrels were picked up. That winter the ice made during low spring tides which appeared to kill nearly everything off, as there was not one-fifth taken from there the following year. Pownal Bay was found to be in the same condition; this has been noticed and watched by practical men.

The following extracts are taken from a special report by *Professor Edward E. Prince*, Commissioner of Fisheries for Canada, in the department's annual report, 1895. It is entitled, *Peculiarities in the Breeding of Oysters*:—

"In studying oyster propagation, the first important fact to be noted is this, that each oyster originates in an egg of extremely minute size. This egg is like a round ball, but soon assumes the form of a somewhat oval body. Each measures about one five-hundredth part of an inch in diameter, so that five hundred of these eggs in the case of our Atlantic oyster (*Ostrea virginiana*, Lister), would cover an inch if laid side by side. The English oyster (*Ostrea edulis*, L.) produces much larger eggs, no less, in fact, than one two-hundred-and-fiftieth of an inch in diameter, or more than twice the size of the oysters' eggs in our Canadian water.

"Each egg has the character of a minute grain of soft living matter, practically invisible to the naked eye, and unprovided with any protective shell or hard membrane. These eggs are produced by special organs in the mature oyster at a particular period known as the breeding season, to cover which period legislative prohibitions have been enacted in all civilized countries. These special organs form a network imbedded in the fleshy body of the oyster. The network is made up of very delicate canals, with pockets or follicles at intervals, and it is in these follicles that the eggs arise. The eggs, when ripe, pass down the fine canals into a main duct on the right and left side of the oyster. These larger right and left ducts open into the fore part of a slit or depression, into which also the kidney or organ of Bojanus opens. The depression is really in the mantle cavity or chamber of the oyster, which may be also called the shell chamber, and it passes generally down close to the great adductor muscle.

"Before an egg can grow into an oyster it must receive a peculiar granule of living matter, the sperm particle, which is the male element. The egg must be regarded as a female product. When the two are fused, fertilization is completed, and the egg produces a young oyster. The sperm-particles are exceedingly minute, so small, in fact, that a myriad of them simply appear as a drop of creamy fluid. Eggs and sperms can be distinguished from each other by a trained expert without the aid of any instrument; but when magnified under a powerful microscope, the appearance of the two is wholly dissimilar. The late Professor Ryder discovered a chemical test of a very efficient character, for when using a mixture of methyl green and sanfranin (a saturated alcoholic solution), he found that the eggs were always coloured red and the sperm granules appeared of a blue-green colour.

"The two elements (eggs and sperms) are formed in different individuals in our Atlantic oyster. In other words, the male oyster is distinct from the female.

"In the species referred to (excluding the European species) when the female is ripe, the eggs travel down the tubules into the large ducts, and finally reach the cavity of the mantle, or shell-chamber, as it may be called. The eggs are so minute and light that when the oyster opens its shell, the inrush of water carries them out. They float away into the open water, and occur in such countless myriads that the surface of the sea on some oyster beds is quite cloudy with them. A female Atlantic oyster may pour forth in a single season, fifty to one hundred millions of eggs. When shed, they have not undergone the essential process of fertilization. Only contact with the sperms produced by the male oyster can accomplish that. The eggs are, therefore, sterile, and will produce nothing unless vivified or fertilized. Now the male produces great quantities of sperms, which pass into the shell chamber just as the eggs do in the female. These sperms are simply washed out into the open water, so that they come into contact with the floating eggs, if the weather and other conditions be favourable. Countless numbers of both eggs and sperms fail to achieve this, and, of course, perish. Neither eggs nor sperms, if they are kept separate, survive very long. When the egg is penetrated by a living sperm, it rapidly changes its appearance and structure. These complex changes need not be described here. They proceed while the egg, an almost invisible floating speck, is carried about in the sea. In the space of a week, more or less, according to the temperature and season, the little egg becomes an active embryo, provided with a delicate shell. It soon settles down and becomes attached to any available object.

"It is possible that deterioration of oyster beds may arise, at times, from a serious disparity in the relative numbers of the two sexes, in the case of the Atlantic and Pacific oysters, at any rate.

"Under favourable conditions, however, such is the number of sperms poured into the sea by a single male, and such is the quantity of eggs produced by each female, that the perpetuation of the beds is ensured, unless unusual circumstances intervene. One sperm suffices to fertilize a single egg.

"The European oyster does not produce more than one or two millions of eggs, which are thrown out as black spat. It has, therefore, not one-hundredth part the fecundity of the Atlantic oyster, but the young have the advantage of maternal protection until somewhat advanced, instead of being emitted into the open water, while still in the first and most frail condition. In all the species, however, a very minute proportion of the embryos or 'spat' ever arrive at maturity, and apart from the perils which beset them when floating in the sea, there is always the danger that the places upon which the spat settles, or falls, may present conditions fatal or, at best, very unfavourable. Artificial culture attempts to avoid these perils and to overcome these most serious disadvantages.

"The following summary exhibits the more important differences between our Canadian oyster and the European species :—

" *Canadian Oyster.*

" (1.) Sexes separate.
" (2.) Unfertilized eggs shed by parent.
" (3.) Eggs and sperm meet in the open sea and fertilization is accomplished.
" (4.) The swimming embryo is naked and has for a time no shell.
" (5.) Number of eggs enormous, probably 50 to 150 millions produced by each female oyster.

" *European Oyster.*

" (1.) Sexes combined in the same individual.
" (2.) Eggs never shed before fertilization.
" (3.) Eggs fertilized and retained within the mother-oysters' shell.
" (4.) Embryos protected by a thin shell, and emitted as 'black spat.'
" (5.) Eggs do not exceed one or two millions, *i.e.*, one egg for every hundred eggs produced by the Canadian oyster."

Oysters will spat in shallow water sooner than they will in deeper water, owing to the difference of temperature at the different depths.

They will breed long before they are full grown, very probably in the first year of their age; certainly in the second. Their productiveness appears to reach its maximum at five or six years, and afterwards to decline; but much further observation is needed before any certain knowledge is acquired.

The state of the weather, however, has a serious influence on the spawn, and on the adult oyster power of spawning. A cold, wet and windy season is very unfavourable, and a decidedly cold day will kill the spat, so that it will be seen that while in the embryonic state young oysters are very delicate and susceptible to cold. If the temperature of the sea suddenly drops many degrees, they all close their shells and fall to the bottom dead, just as a frosty night will "nip up" and cause to fall off from the branches the delicate blossoms of fruit trees. If, on the contrary, the weather continues of a warm and equable temperature both day and night, and if it be at the same time calm, the young oysters will have a chance of taking up their positions on the various substances they love best, viz., stones, gravel, empty shells, living oysters, and other clean hard substances.

In this connection I quote *from Philpot's " Oysters and all about them " :*

" A controversy hinged upon whether an oyster, while on the bed, lay on the flat or convex side. Mr. Frank Buckland, who originated the dispute, maintained that the right, proper and natural position of the oyster, when at the bottom of the sea, is with the flat shell downwards; but the natural position of the oyster is of no practical importance whatever; and I know from personal observation of the beds at Newhaven and Cockenzie, that oysters lie both ways, indeed, with a dozen or two of dredges tearing over the beds it is impossible but that they must lie quite higgledy-piggledy, so to speak.

" There have been several other disputes about points in the natural history of the oysters—one in particular as to whether that animal is provided with organs of vision. Various opinions have been enunciated as to whether an oyster has eyes, and one author asserts that it has so many as twenty-four, which again is denied, and the assertion made that the so-called eyes projecting from the border of the mantle have no optical power whatever; but, be that as it may, the oyster has a power of knowing the light from the dark. Fishermen say that if the water is clear where these creatures are lying in their beds, they may be seen to close their shells whenever the shadow of a boat passes over them."

The oyster is not gifted with any kind of locomotion, except during its earliest stage, remaining afterwards stationary throughout its life.

In the parcs at St. Joseph's, in France, which are most exposed to the inclemency of the weather, the oysters are turned, and laid on their flat sides. This ingenious arrangement renders the animal less accessible to the action of the cold, and gives the shell a firmer position, thus preventing it from being too easily lifted by the surf, and from being thrown to a distance by the violence of the sea.

OYSTER FOOD.

In discussing the question of oyster food in its many aspects, the general character should first be examined. The oyster, it is well known, is quite an epicure in its feeding, preying almost entirely upon the minute, lowly organized plants that float or swim in its neighbourhood. With its shell slightly opened, and with the dark-coloured sensory margins of its mantle protruding, it draws into its shell a narrowing food-bearing water current. When it once draws in the current, it carefully screens out the minute food particles, and passes out a stream of filtered water. It avoids, if possible, ingesting sand or mud. Oyster food, it will be found, consists mainly of diatoms, a particular kind of minute, lowly organized plants that have the remarkable power of moving freely about in the water. Unlike any other plant, they are incased in a pair of saucer-like glassy shells, fitted one to the other like the lid to a pill box. The glassy cases of the minute plants appear in no way to inconvenience the oyster's digestion. The mucilaginous sheathing that encases prominently many diatoms, is first dissolved, and the digestive juices find their way through the intricate glassy valves, speedily attacking and reducing the jelly-like contents, together with the inclosed golden-brown pigment pellets. The emptied diatoms appear to settle gradually, and are soon brushed by countless cilia from the stomach to the intestine.

The Whitstable oyster merchants and fishermen have an idea that constant dredging tends to fatten oysters, by bringing them in contact with a wider food area, and this opinion is not contrary to that of the most experienced Essex merchants.

An oyster requires a clear, clean current of water of sufficient strength to carry off all excrement of the oyster, and other foul matter that may have previously been deposited on the area, either by the preceding tide or lodged there accidentally. Saw-dust, mill rubbish, and heavy soil drainage are very injurious to any oyster bed, and such sites should be avoided if possible.

Fresh water does not harm in moderation, and when mixed with sea water, the oysters, when young, appear to fatten and grow more quickly where they are subject to the effects of numerous fresh-water deposits, but with too much fresh water, the oyster increases in size, it becomes fat and flabby, and eventually the oyster gapes and dies, with the appearance of bursting themselves open.

OATMEAL AS A SUPPOSED ARTIFICIAL FOOD.

As this will probably fall into the hands of others than those who actually cultivate oysters, but who are fond of them, and are in the habit of keeping a small supply on hand, it is advisable to point out that some persons, through ignorance, have an idea that oatmeal, flour, or other mealy stuffs diluted in water with salt are beneficial to the oyster, and think that it will fatten it; this notion is absurd in the extreme, as it will only hasten its death. Meal of any description, when wet, will naturally swell and eventually turn sour, and it is in this case when given to the oyster, the mealy water will enter the shell, filling the fish with this offensive matter, choking the oyster in much the same way as sand will, the consequence is, the oyster puffs up, turns a deathly white in colour, loses its flavour, becomes very insipid, and if left long in this state will soon die, while persons are under the impression the oyster is thriving. Let any person, if he choose to keep oysters after they are caught, try the following experiment:—Place the oysters in a barrel or other receptacle, putting each oyster in separately with the deep shell downwards, pack as tightly as possible, and cover over with a wet cloth or sack, keeping the air and draught from them. The oysters will feed and fatten in their own liquor, and I am confident they will be found in a much better condition, their flavour being preserved, will be more palatable, and, being firmer, they will keep much longer than if placed in oatmeal and water.

THE ENEMIES OF THE OYSTER.

There are some who would imagine that the cultivation of oysters is a matter of small importance, and when the area is planted there is nothing further to trouble about until they have grown large enough and are ready for market, but I must call your attention to the facts of the case, when you will see that it is not all sunshine with the oyster culturist; some of the items referred to will be found in the following pages, beginning with the

Fivefingers, or Starfish.

The following is quoted from *Philpot*:—"No person would have thought, on placing an oyster and a five-finger side by side, that the starfish was a relentless foe to the oyster. Those who can remember their first fruitless endeavours to open an oyster may naturally wonder how the starfish can achieve such a feat. As I have repeatedly seen, it proceeds as follows:—Clasping the oyster in its rays, it brings it mouth opposite the hinges. From the mouth it pours a secretion which paralyses the hinge-muscle, and causes the shell to open. It cannot, like a dogwhelk, extract its prey and put it into its stomach, so it reverses the process, and puts its stomach into, or rather over, the oyster, protruding the stomach from its mouth, surrounding the oyster with its coats, digesting it, and then withdrawing the stomach into its body. The wildest fancy of Oriental legends never equalled in grotesque imagination this perfectly true history of the oyster and the starfish.

"But although the starfish can, in this extraordinary manner, manage to devour an oyster as big as himself, it must evidently be somewhat troublesome to him, for he prefers to attack oysterbeds covered with "spat," "brood," or "half-ware,"—that is, oysters from one to three years of age—whose shells are not so hard, and whose flesh is more delicate and pleasing to the enchinodermal stomach.

" Starfish will also feed on mussels which themselves destroy oysters by smothering them, and on whelk-tingles, dead crabs, barnacles, &c., so that, after all, they may do some good, as a certain amount of vermin in a game preserve is anything but injurious to the welfare of the whole population; the vermin keep up the balance of nature by destroying and eating the sick and weakly animals, which might otherwise die a lingering death."

Sea Urchins.

The next on the list of the oyster's enemies is the Echini, "sea eggs" or "sea urchins," whose well-known empty cases are so common on every shore. The body of the sea urchin consists essentially of an exterior shell, or solid corona, covered with spines, and invested in a delicate membrane, furnished with vibratile cilia. This corona is formed of an assemblage of contiguous polygonal plates, adhering together by their edges. The plates are so arranged that the shell is divided into vertical zones. These zones are of two kinds, one being very much larger than the other; the plates of the larger zones are covered with sharp spines, which are movable, and serve at once for protection and locomotion. The plates of the smaller zones are pierced with pores, from which issue filaments, by which the animal breathes and walks.

It can travel either on its back or stomach. Whatever their posture, they have always a certain number of feet which carry them, and suckers with which they attach themselves. In certain circumstances the animal walks by turning upon itself, like a wheel in motion.

Nothing is more curious than to see a sea urchin walk upon smooth sand. One of the most singular organs of this interesting animal is its mouth. It is most curious. Placed underneath the body, it occupies the centre of a soft space invested with a thick resisting membrane; it opens and shuts incessantly, showing five sharp teeth projecting from the surface, the edges meeting at a point, supported and protected by a very complicated framework, which has received the name of Aristotle's Lantern. To this formidable mouth is attached an œsophagus, or gullet, and an intestine which extends along the interior walls of the corona, describing the circumference of its principal contour.

That sea urchins are regarded as vermin in the oyster parcs has been proved by the following evidence:—In the month of May of a certain year, a sudden inroad of these sea urchins was discovered in the Paglesham fishery (Essex), and by the month of August of that year they had eaten an enormous quantity of oyster spat, the size of a split pea. Frank Buckland noticed several of these creatures on the oyster beds in Kilkerran Bay, near Ballynohinch, Galway, and naïvely remarks, "that they were not there for nothing."

Dogwhelks.

The "dogwhelk" or "whelk-tingle" *(Purpura lapillus)* is extremely injurious to oysters, and destroys them in vast numbers. Frank Buckland speaks of them as follows :—These dogwhelks seem to find in a short space of time where the oysters may be found in numbers, for my friend Mr. Browning, tells me that not very long ago some fishermen found a bed of oysters out in the mid-channel deep sea. These oysters were, at the time they were found, not large enough to be dredged up and taken away to lay down on private beds, so the dredgers determined to leave them till they grew to the proper size. They had not, however, calculated upon the whelk tingle, for these rascals, soon after the departure of the fishermen, found out the bed as well as the fishermen, and were there before them, killing every one of the oysters, leaving only the clocks, or empty shells ; and when the dredgermen came next year to take up the oysters, they found nothing but whelk tingles and fivefingers, but no oysters. The whelk tingle gets at the meat of the oyster by boring the shell with his sharp tongue, which causes the mollusc to open its valves. Rewards are offered by the oyster proprietors in England for these whelk tingles, paying one shilling a bucket for them.

Lieutenant Winslow reports, "another enemy of the oyster, particularly when young, is the Astyris, discovered in Chesapeake Bay, near Crisfield, Md. Also the rough whelk *(Urosalpinx cinereus)* is known to do great injury to the oyster in Long Island Sound, and the destruction of the young alluded to in his previous reports as due to drills may be effected by this animal. That large numbers are destroyed by the whelks cannot be doubted ; but as it is possible that the Astyris may also assist in this destruction, a more extended investigation of this question, than I was enabled to make, is desirable."

Seaweed.

Seaweed of every description should be removed from all oyster beds, as it increases the work of dredging, covers up the oysters and grounds, and at the season of spatting it covers the cultch, so that the spat that settles there is lost. Weeds also collect mud, which would smother the spat even if it found a resting place, and generally makes foul and dirty ground. The oyster areas cannot be too clean for the reception of spat, and the cultivation of oysters.

Seaworms.

Seaworms, some of which are of great beauty, are also enemies to the oysters. They bore through the shell at all points. Frequently the oyster will resist the invasion of the enemy by depositing some pearly matter between its tender body and the mouth of the invader, and thus compel him to beat a retreat. But others are not so fortunate : for in the holes drilled by the seaworms a preparation is often made for the assaults of a parasitic sponge, which insinuates itself and eats further than its predecessor into the oyster, causing the softer parts of the shell to rot away, and spreading through the whole substance of the oyster like a dry rot in wood, until vitality is destroyed, and its loosened shell becomes detached and empty on the waters.

Sand.

Amongst the inanimate enemies of oysters, Frank Buckland makes special mention of sand and frost :—"Of all inanimate objects which are inimical to the oyster, there is nothing more fatal than sand. If we consider the highly sensitive and delicate structure of the oyster, it will be easily seen how very obnoxious sand would be to his welfare. The worst of sand is that it is very liable to shift about in the sea, and great sandstorms not unfrequently occur, just as they do in the deserts of Arabia, destroying suddenly whole caravans of camels and men. When I was at the Isle of Ré, Dr. Kemmerer gave me a famous instance of a large number of oysters being destroyed by sand. This event happened at a place called Morique. There was a great number of tiles laid down at this spot, and there were, besides, a large number of oysters naturally adherent to the rocks. Just outside, however, there was a moving sandbank. The oyster spat had taken well, both on the tiles and on the stones, but during a storm the waves brought a quantity of sand, ruined the whole bed, and killed every oyster.

Although sand in large quantities is very dangerous to oysters, yet a certain quantity is by no means prejudicial to their welfare. The admixture should amount to what my friends at Ré call *sable vaseux*, or mud sand, which is very good for oysters, but it requires an experienced eye to know it when they see it.

Sand destroys oysters either by smothering them *en masse*, or by getting between the shell near the hinge, where the oyster cannot get rid of it. Frost, ice and snow are also destructive to oysters, but Buckland is of opinion that in all ordinary frosts, where the oysters are covered with three or four feet of water, they are safe.

By reading the above it will be seen that it is dangerous to place oysters on areas where the sand is continually shifting, for when the oyster opens to feed, the sand is drawn in between the valves of the shells, and it is unable to throw it out on account of its weight, consequently it dies. Any person thinking of cultivating oysters should first ascertain whether the area in question is suitable and the question can be settled just as easily by experimenting with a few as with a large quantity, and, in the event of failure, would save a large expense.

Mussels.

I must not omit to mention mussels as being one of the oyster's enemies. In some places, they are more so than others. They are the worst plague of the parcs at Oléron. They multiply there in such numbers that if the concessions are not visited and the mussels removed each time the tide allows it, they soon cover the ground in very thick masses.

I also remember an instance where mussels had spat on two oyster areas in Holland. One owner endeavoured to remove the mussels, letting the oysters remain, but the mussels grew faster than they could be cleared off, the consequence was that mud had accumulated to such an extent that the oysters were literally smothered, and what did live were thin and starved, and were a dead loss to the owner. The other area was cleared of its oysters with all possible speed, and the only loss incurred was the labour in removing the stock to more suitable grounds. On another occasion, a spat of mussels settled on the Whitstable Oyster Company's grounds ; as soon as it was discovered, instructions were given to the men to remove all they possibly could, but, in the meantime, a vessel-load of starfish were deposited over the grounds to destroy them, as starfish will always take to what is most delicate and easy to get at ; the mussels being very young at this time, were, with the aid of fivefingers and man, soon got rid of ; the starfish were then in turn disposed of, by being caught in the dredge, or they would soon have attacked the young oysters, when they found that mussels were getting scarce.

Mussels increase and grow very fast, attaching themselves to any firm substance by means of a collection of horny threads *(byssus)* with which they hold themselves in any one locality. Mud collects among their numbers and mud banks are often built by myriads of these shell-fish attaching themselves together. They thrive on muddy bottoms and become very numerous, they live on the same food as oysters, and when found in the same locality, the result is that the oysters are starved out.

The men at Arcachon say that there is not enough lime in the water for both the oyster and the mussels, and the latter being the stronger, they get all the lime, and the former suffer correspondingly. This is one way of expressing the general fact that somehow in the complex struggle for existence the mussels get on best.

Mud Digging.

Among other enemies, not only to the oyster, but to the beds and areas themselves, is the most destructive machine ever invented, this is the mud-digging machine.

I am not aware of such a practice ever existing, in any other portion of the globe, and yet within the last thirty years, millions of tons of mud have been removed, and thousands of acres of good oyster fishing areas have been destroyed. It is commonly called mussel mud, which, I think, often shields and protects it from further molestation: it chiefly consists of the shells of oysters, more or less decomposed, with mud that has settled in layers in the locality and mixed with the oysters; mussel shells are sometimes found, but not in the proportion that oyster shells are, or to even give it the name it bears. Some of these beds must have existed for ages, as the deposits are often found 20 and 30 feet deep, but when once the crust of the bed is broken, it has spoilt the area for cultivating purposes.

These oyster fisheries, one of the great natural resources of our coastline and rivers, are a source of wealth by means of bringing ready cash to the fisherman, and to many others indirectly, and yet they are being gradually but surely destroyed by man. I am now speaking in favour of the oyster fisheries and the preservation of the beds, but I am afraid I may hit rather hard on some of the men who are in the habit of using mud; however, facts are stubborn things, and here I must clearly explain them.

The construction of this machine is composed of a substantial wooden frame-work of about eight feet in height, eleven feet wide and twenty-five or more long. At one end, on the upper part a block is attached through which a chain or rope is roved, one end being connected to a strong shovel, scoop, or bucket, with sharp heavy iron teeth on one side; this scoop is attached to a long stout staff or handle, varying from 15 to 30 feet long, by means of a hinge and a spring attached, for the purpose of emptying the contents of the bucket into sleighs, when raised to the surface. The handle is operated by one man, who places the scoop into position; this can be felt if it is placed correctly, by practice. The other end of the chain is connected to a windlass, which is fitted to the frame-work, and is so constructed that it can be worked by horse-power, one or more horses hitched to it. The scoop will hold about two bushels at a time, or thereabouts.

The idea is to place the digger upon the largest oyster area they can find when the ice is sufficiently strong to bear the weight of horses, sleighs, men and gear, &c.; digging for mud generally commences during the month of February, when other work is dull. The diggers will then commence to cut holes or trenches right through the entire length of an oyster bed, sometimes cutting to a depth of twenty, twenty-five, or even thirty feet, and from nine to fifteen feet in width. These holes will sometimes fill up in course of time with soft mud, or the sides of the cut will cave in, which totally destroys a large area of very valuable oyster ground, which can never be reclaimed, and is of little, if any use, to the oyster fishermen afterwards.

Thousands of acres of once valuable oyster ground have in this way been destroyed in our rivers and bays, and I regret to say this is not checked to the extent it should be. This system should be immediately stopped, as far as the fishermen are concerned, or I am very much afraid the day will soon come when our public oyster fisheries will be entirely ruined. This is one of my ideas in bringing before the notice of our readers, the reports of fishery officers of past years, when it clearly shows that the injury then done was more than noticeable. The following is taken from a Prince Edward Island fisheries report, dated 1873:—"During the past ten or twelve years, millions of tons of oyster shells and mud have been taken up by our farmers from oyster beds by means of dredging machines, worked by horses on the ice." In another report of 1883, an officer states that, "Oysters are protected by the fishery officers in summer, that they may be destroyed by the farmers in winter."

I will repeat no more on this subject, as the extracts I have collected and arranged in these pages can be perused at leisure. The deposit recovered from the deep by the farmers is placed upon their lands as a fertilizer, but whether this really does come up to their expectations I cannot say. I have heard them speak both in its favour and disfavour.

It would appear that in the view of agricultural experts that, while mussel mud forces a certain crop for a season or so, it really deteriorates the land to such an extent that it takes many years to bring it back to its former state by even putting on a larger supply and more expensive fertilizer. Be that as it may, I merely wish to point out the serious injury that is, and has been done, to the valuable oyster areas, which, if brought into a state of cultivation, would have remained clean, firm and suitable grounds. If these machines had never worked upon the beds, the fishermen would enjoy to-day a much more extensive oyster area with more profitable results.

Before leaving this subject, I will mention one instance of an area which will fully bear out what I have already stated, it being an extract from the inspector's report of Nova Scotia, dated 1868, and is as follows :—I am informed that the local Government of this province (upon what authority I cannot say), granted a lease of certain oyster beds in Malagash Harbour to Alexander Macfarlane, Esq., of Wallace, for the purpose of cultivating oysters. The inhabitants generally are very much opposed to any such grant, as the mussel beds and the mud on the flats is invaluable for manure, and the granting of these privileges to Mr. Macfarlane has entirely deprived them of its use. I am not prepared at present to say whether the right to cultivate oysters may not be held by private individuals without interfering with the manure referred to. When the ice goes out in the spring I will be able to judge better. It is a matter of considerable importance, and very desirable to encourage, as far as possible, private enterprise in this as well as many other branches of our invaluable fisheries, and I have no doubt that oysters may be profitably cultivated, not only at Malagash, but Wallace, Tatamagouche and Pugwash as well. I hope the day is not distant when private enteprise will develop this branch of our natural resources to the advantage of the province, as well as to all concerned."

To-day the above-mentioned area, which was then leased to the Hon. Mr. Macfarlane, is now under cultivation by private individuals, and, had not the lease been granted in the first place, this valuable ground would have been the same as others, utterly destroyed by these mud-digging machines.

In 1895 I had the pleasure of visiting Tatamagouche Bay officially, my report, submitted to the department, was as follows :—

Malagash Bay.—The only place where oysters are found is situated in the basin at the head of Tatamagouche Bay on the west side. This area is comprised of several narrow streams or channels which are visible at low water, but at high tide a large extent of water is seen, which covers extensive mud flats, and are protected from the outside by spits or bars running out from both shores, leaving a very narrow channel to enter the basin, making the place almost landlocked. The bars on the north side, situated in Cumberland County, are called shipyard bars, which run off from Shipyard or Waugh's island, and the bar on the south side in Colchester County is called Thrumpcap bar. There are also some small bars or ledges inside these bars, which dry at low water. These bars are covered on the top with small mussels, which are said to keep the bars from washing away ; it is on these bars, among the mussels, that most of the oyster spat rests. The bars are natural spat collectors, and are literally covered with young oysters every fall, and unless they are picked from these ledges, they are killed by the severity of the winter, as the ice rests upon them and the frost kills them. I am informed that in the spring months, after the opening of navigation, scarcely an oyster is to be found until after the spatting season is over, when these beds or ridges glisten and sparkle like sheets of gold, the sun shining down on the semi-transparent shells of the oyster spat.

"The streams before referred to are nearly all taken up by leaseholders, very few oysters were in these streams until they were transplanted from the bars by the leaseholders. These men are interesting themselves in this industry, and I have every reason to believe they will become successful. Mud digging is generally carried on off Blockhouse Point on the east side of Tatamagouche Bay, and to the south of the bar leading to Tatamagouche River, where extensive oyster beds originally existed, but are now covered over with mud and eelgrass. Oyster mud is to be found here to last for ages, as the quantity taken is very small."

Twelve persons are now holding oyster licenses for areas amounting to about seventy acres, and many others desire to have areas granted to them, which would not have been possible, had the farmers been allowed to dig mud. Many areas of once prolific oyster-yielding beds are now lying waste and totally unfit for cultivation in other localities, which might have been saved and utilized in the same way as Malagash Bay.

Under the heading of enemies, I have not included man's recklessness and unwise methods, although these are, perhaps, the most destructive of all agencies connected with the industry. Take the close season, for instance, there are men—impelled, we must suppose, by a mixture of improvidence, greed, recklessness and wilfulness, who persist in evading the regulations and restrictions with an ingenuity worthy of a better cause.

Overdredging or overfishing, which is only another way of saying the improvidence, or the cupidity, or perhaps even the stupidity of the arch-enemy, man. But the most difficult to deal with are thieves and pirates, who persist in poaching on all rich and well-stocked oyster beds. It is a cause of worry, annoyance and expense to those who own areas, but it is one of the things difficult to remedy.

Various other reasons might be quoted, such as removing small oysters from natural beds, and throwing them overboard, either at random or, worse still, leaving them on the shore to die and rot, after having separated them from the marketable ones.

Now, if we can all help the oyster every so little, so that these unfortunate molluscs shall have a somewhat better chance in the struggle for existence, we would soon see a change for the better.

Conclusion.

In this report I have collected numerous extracts relating to oysters from the fisheries annual reports, when it was then seen that further action should be taken to protect and enhance the value of this industry. This was done to corroborate what I have already said and to strengthen the reports made at the time of writing them. I have also, from time to time, made further references to them, as well as to other authorities on oysters. It will be found convenient to have this matter condensed in the form of a compilation for easy reference.

I have given a brief outline of the practical methods in some European countries and the United States, and have endeavoured to set forth a general idea of the work that may be safely carried on in the maritime provinces. For ages past, oysters have existed in our waters, and although they are not dying out naturally, yet with care and attention to this branch of the industry there is no doubt that this valuable bivalve may be increased, both in quantity and quality.

Before closing, I might make a suggestion for the future ? It is, "private enterprise." The depletion and destruction of beds for the sake of immediate gain, with reckless disregard as to the future, demands serious attention ; but let us hope that judicious enterprise, which may be slow at first, will make strides to repair the mischief and build up a lucrative industry. It has been done by others, and why should it not be done by us ?

The following table, which is more than sufficient to demonstrate the importance of the oyster industry in Canada, shows the whole catch for the respective provinces where this bivalve is found, for the last twenty-two years :—

TABLE showing the Aggregate Quantities and Value of Oysters caught in the Dominion since 1876, compiled from Annual Reports of the Department of Fisheries.

YEAR.	New Brunswick.		Prince Edward Island.		Nova Scotia.		British Columbia.		Totals.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Brls.	$	Brls.	$	Brls.	$	Brls.	$	Brls.	$
1876	7,911	23,733	7,905	23,715	1,040	3,120	....	....	16,856	50,568
1877	7,738	23,214	20,850	62,550	980	2,940	....	....	29,568	88,704
1878	11,270	33,810	17,902	53,706	912	2,754	....	....	30,090	90,270
1879	9,420	28,260	18,145	54,435	1,067	3,201	....	....	28,632	85,896
1880	12,280	36,840	20,297	60,891	1,861	5,583	....	....	34,438	103,314
1881	8,413	25,239	20,815	62,445	2,270	6,810	....	....	31,498	94,494
1882	5,859	17,577	57,042	171,126	1,745	5,235	....	....	64,646	193,938
1883	10,317	30,951	38,880	116,640	1,343	4,029	....	....	50,540	151,620
1884	11,851	35,553	28,290	84,870	1,595	4,785	220	1,250	41,956	126,458
1885	27,368	82,104	28,204	84,612	1,310	3,930	250	1,250	57,132	171,896
1886	28,083	84,249	33,125	99,375	1,397	4,191	300	2,100	62,905	189,915
1887	23,196	69,588	36,448	109.344	1,716	5,148	....	3,500	61,360	187,580
1888	16,384	49,152	35,861	107,588	1,589	4,767	1,200	2,400	55,034	163,907
1889	17,760	53,280	41,257	123,771	2,532	7,596	1,500	5,250	63,049	189,897
1890	16,710	50,130	35,203	105,609	3,013	9,039	1,750	7,000	56,676	171,778
1891	14,934	44,802	41,030	123,090	4,318	12,954	750	3,000	61,032	183,846
1892	17,840	53,520	32,937	98,811	3,776	11,328	1,000	4,000	55,553	167,659
1893	16,365	49,095	29,627	88,881	3,488	10,464	1,600	8,000	51,080	156,440
1894	16,960	67,810	24,055	96,220	2,512	10,048	1,600	8,000	45,127	182,108
1895	18,070	72,280	25,463	101,852	2,540	10,160	1,600	8,000	47,673	192,292
1896	14,700	58,800	30,214	120,856	2,460	9,840	1,200	4,800	48,574	194,296
1897	19,835	79,340	20,915	83,660	2,372	9,488	1,600	8,000	44,722	180,488
Total	333,264	1,069,357	644,465	2,034,047	45,842	147,410	14,570	66,550	1,038,141	3,317,364

ANNEX A.

REPORT ON OYSTER CULTURE OPERATIONS DURING SEASON 1898, BY DEPARTMENT EXPERT.

OTTAWA, 31st December, 1898.

To the Honourable
Sir LOUIS H. DAVIES, K.C.M.G., &c.,
Minister of Marine and Fisheries, Ottawa.

SIR,—I have the honour to submit my report for the season of 1898 on oyster culture. Having received instructions to proceed to Prince Edward Island, I was engaged in getting the gear in order for the work which followed.

On securing the services of a small steamer, I proceeded to Murray Harbour, and have been engaged nearly the whole time in removing the weed and eelgrass from an area which had been previously examined and reported upon as being a suitable bottom which could be converted into an oyster bed with the necessary labour; this area is situated to the north of Reynold's West Island, and is composed of firm sand and mud; this was very thickly covered with eelgrass, and by constant working, nearly the whole of the weed has been removed. After all the weed is cleaned off, it will be necessary to put a layer of gravel or fine stones and shells for a foundation, previous to laying the oysters for spawning and growing purposes. I have hopes that it will be converted into a good oyster bed. No oyster beds are located in this district, but occasionally a few oysters are to be found on the flats, and they are of fine quality and in very good condition, showing that if oysters were planted there is every reason to believe that they will grow. There is much speculation among the residents as to where these oysters come from. Some are of opinion there are beds which have not been located, while others seem to think the few oysters found are the refuse from the fishermen's own boats, which they clean out after returning from the oyster fishing season in the vicinity of Charlottetown and Orwell. Oysters originally existed in these waters, as will be seen by the deposits of dead shells which are annually dug up by the farmers, some close to where I have been preparing the grounds; this must be stopped here or they will encroach on the area already set apart for oyster culture. They also dig mussel mud in Fox, Greek and Murray Rivers. These areas are shallow, and have been dug upon by the farmers for years past, and are now of no use whatever for oyster culture.

RICHMOND BAY, P.E.I.

After the opening of the fishing season, I visited Richmond Bay and adjacent waters, making a general inspection over the whole area.

In Malpeque Bay oysters were reported scarce, the general average catch did not come up to a barrel a man per day; there were not more than a dozen boats fishing in the above locality, with the exception of some Indians fishing around Indian and Curtain islands, most of them were engaged in picking the oysters from the shores, wading into the water until nearly waist-deep at low-water time.

On the north-western part of the bay, around Bideford, Narrows, Trout River and Lennox Island, oysters are also found to be getting scarcer, although there are more boats fishing; the sample brought on shore for market is good and of fair size, as the merchants or buyers here will not take small oysters, and the fishermen are beginning to see the result of leaving the small ones on the beds. These men will commence fishing, and after finding the oysters are getting scarce where their boats are moored, will sit down and cull their oysters over, the marketable ones are placed on one side, and any small ones that are taken into the boat attached to larger ones, are separated by means of a sharp blow from either the back or blade of a small hatchet, usually carried for the purpose of separating clusters of oysters; the small ones are then returned to the water, and a fresh place is then selected to commence fishing again. This is carried on until the men are satisfied with their day's work, or are compelled to return to land through bad weather; the above is a decided improvement upon the system of culling and separating their oysters above high-water mark, where the young are left to die and decay. It would improve the oyster industry if this regulation were rigidly enforced by the fishery officers around the whole coast line where oysters exist. Small oysters were reported plentiful, and this is a good and healthy sign.

In Grand River, the sample of oysters taken from the lower part are very fine, both as regards quality and size, but higher up the oysters are found to be much smaller; several small oysters were lying along the shore where the boats landed, they looked as if they were the refuse of their catch. These small ones should have been replaced on the beds, as they will evidently die along the shores when once the winter sets in.

On the northern portion of Richmond Bay, abreast of Curtain Island, the oysters are of a very fine quality and of large size; they are taken from deep beds, and are becoming very valuable, as I saw them sold to buyers afloat at $4 per barrel. Large oyster beds are found in this locality in deep water (from 20 to 26 feet), where it is almost impossible to use tongs on account of the depth and current of the tides. I cannot see that dredging in moderation does any harm to these beds, but would improve, cleanse and extend them if a limited time were given to dredge them to fishermen who choose to catch oysters by that method. Oyster beds that have been previously dredged upon in this locality are now covered with small oysters, the most noticeable are the Sand, or Long bed, and the Townsend, or 40-acre patch; both these beds are now covered with small oysters, too small for market, and several fishermen state that dredging is the cause of the spat settling there, as the shells have been raked over and cleansed. If the use of the dredge were allowed in this bay for a portion of each season, say from the 20th or 30th of October, when the weather becomes unsettled, till the close of navigation, then many a man could get a day's work by using dredges, where he could not catch an oyster with tongs. An imaginary line might be drawn from Gull Point, on the west side of the bay, to Beech Point, on the east side, allowing fishermen to dredge on the north of this line.

While visiting the boats, I found the sample of oysters taken to be of fair size, but if these oysters were left for another season they would make a splendid marketable oyster. Some of the men fishing had no license, and when asked, "why not," they stated they did not know where to obtain them from, as no one had been around with them.

On the shoals and flats between Curtain Islands, innumerable small oysters are found, but these do not mature, and I was informed that if I visited the place in the spring I should find the bulk of them had perished through the winter. These small oysters should be allowed to be picked for planting purposes, as they are easy of access, and no harm is done by granting permission to holders of licensed areas to restock their beds with small oysters from these flats and shores during the regular fishing season.

The oysters landed at St. Eleanor's were of a fair sample, many of them being just within the size limit, and yet scarcely fit for market. A fisherman appears to take no interest whatever in his future welfare, his only aim while fishing is to keep everything he catches in the shape of an oyster so that he will quickly fill a barrel; the quantity taken by each fisherman varied from one-half to a whole barrel.

It appears to me that a patrol boat is required the whole time, with a staff of sufficient force to inspect and enforce the regulations required, and see that no one fishes but those holding licenses and legal fishing appliances over this valuable area; also, that landing stations should be specified at different points, so that oysters should be landed only at such places as should be named or arranged with the principal buyers, or easy places of access, and that a warden should be on hand to inspect all boats as they land their oysters daily. If any small ones are brought on shore, such officer might see that they are replaced on the beds by the person in whose possession they were found, instead of being thrown on the shore or near the packer's warehouse to die and rot; this would not cause a great deal of expense, and would prove a great benefit to the industry.

TRACADIE, N.S.

On visiting the grounds at the above place, I found that they were clean, and the oysters had grown thicker and larger. I also noticed a slight percentage of dead ones amongst them ; this result I attribute chiefly to the rough usage the oyster had received from the time it was caught until relaid, as in nearly every case I noticed the shells of the dead oysters were chipped. They were transplanted while the oysters were growing, the shells being very tender and delicate at the time. The flesh of the oysters was very good, and of a much more salty flavour than those taken from the north-west arm. I was unable to find any trace of this year's spat ; that might be on account of the rainy and wet weather that prevailed in this locality during the spatting season, also, to the limited time I was there ; as the weather was very wild during my stay, I was unable to make an extensive examination to see if any spat had settled on any other parts of the bay, but, taking everything into consideration, the grounds were in a satisfactory condition.

CLOSING PUBLIC AREAS.

My attention has been called to several public oyster fishing areas which, of late years, have had a decided falling off in the catch ; this I attribute chiefly to the overfishing of these grounds, the demand is now becoming much greater than the supply, and the increase in the number of fishermen who catch oysters is owing principally to the increase in price giving them more energy to work on the beds, even if under more trying circumstances. The consequence is that the beds are now becoming denuded of oysters, and before the oysters have attained a marketable size or age, they are caught and the beds have no time to recover. Fishermen can see this, but cannot prevent it themselves, and it would be advisable, in the interests of the industry, to close down certain areas for a limited time, say, if only for one or two years, it would be found to be of advantage to the fishermen, for when they did commence fishing on an area that had been closed they would have something to catch, as the oysters would be full grown. Clyde River and Long Creek might be reserved alternately each year ; then Mill Creek, Johnson's River and Pownall Bay ; in fact, many such areas might be closed down on the Island ; areas, also, in New Brunswick and Nova Scotia might be regulated in the same way, and I am sure if this matter were given serious thought and carried into effect it would give a fresh start to the industry and keep prices in good shape, as there would be something worth sending to market ; otherwise, the natural growth of the oyster on public beds is not sufficiently fast to supply the demands which increase each year, and the beds must ultimately collapse, through being overfished.

PRIVATE AREAS.

The safest and most valuable scheme for the preservation of the oyster in the maritime provinces is to encourage private culture. Interest has already awakened, and it is seen that, although in its infancy, it will develop into a large undertaking in the near future, already between 1,100 and 1,200 acres of ground have been taken up in Dominion waters, while other applications have been also made. Men who have launched into this enterprise can see the necessity of continuing the same for the maintenance of the oyster, and when properly managed, it is found to be a profitable industry. Persons in the oyster business, and having a piece of ground, find it invaluable for keeping their stock until they find a firm market ; these persons can afford to be more particular in their culling as they can return all immature oysters to their beds ; these can lay and develop into larger oysters, giving a profit, if only in the growth alone, where oysters are sold by the measure ; it is especially so with those who buy from the ordinary fishermen, when so many small ones are to be found when culling them over for market. On obtaining possession of an area for the purpose of putting it into a state of cultivation, the beds may be stocked by picking or catching small oysters from the ordinary beds ; there has been some objection to this, as it is reported to deplete the natural beds, but there are several places where oysters may be picked on the ebb-dries and shallows, which, if they are not removed are inevitably lost, as they would perish with the winter's frosts. It must also be borne in mind that the taking up of private areas in the lower provinces for the cultivation of oysters is of very recent date, and that no areas are leased where oysters exist, and persons who take up these areas are not thoroughly acquainted with oyster culture in all its branches, it is only fair to give these pioneers in oyster culture a start that will encourage them to keep it up after they once worked their way into it.

The oyster industry of this Dominion has been purely taking advantage of a natural resource and it has had many things to hinder its success. In the past a great many more small oysters have been destroyed above the high water mark and at the doors of packers' warehouses than have ever been relaid by persons having licensed areas ; then, again, mud digging has destroyed many oysters, as well as brood and valuable soil which can never be reclaimed, fishing in close season and through the ice has had also its ill effects ; but I am in hopes that with the combined efforts of fishery officers, regulations and leased areas the oyster industry may yet be able to hold its own. It is far preferable for a few barrels of oysters to be transplanted on an area where no oysters exist, and see that they are being watched and cared for than to see heaps of bleached shells piled up on the shore, the cullings and young oysters which were too small for market left to decay.

In allowing persons to take up areas on depleted beds or other grounds they may choose, and stocking them with young and full-grown oysters, it must not be forgotten that these persons have no control whatever over the spat, and may be the means of restocking many natural beds which are in the vicinity of the leased ones, and I consider it of very great importance to grant licensed areas when not interfering with the public fishery.

The demand for oysters is now really greater than the supply, and the greater the number of resources there are in the different localities the better it is for the public generally, through the spat having a larger area to spread itself and strongly advise the encouragement of private culture, as it will eventually be the only means of keeping up and maintaining a supply.

OYSTER AREAS OF THE PROVINCES.

The oyster areas of the maritime provinces are numerous, situated, as they are, in the indented bays and rivers of the coast, from Baie des Chaleurs to, and including, the islands of Prince Edward and Cape Breton. Most of these areas have been examined and reported on, as may be seen by referring to the annual reports on oyster culture. There is still a large area of ground to be covered, the Caraquet beds have not been examined, and other areas along the New Brunswick shore ; Cape Breton also has some oyster ground which has not yet been gone over ; also, the north side of Prince Edward Island. I have just heard from Mr. W. C. Hobkirk, fishery officer for the Island, that an extensive bed of oysters has been discovered at Savage Harbour, about a mile long, and that the oysters caught are good and plentiful, while another is reported in Tracadie, but no particulars have been given. It is also desired that steps should be taken to examine the waters on the Bay of Fundy shores, and make some experiments as to the advisability of forming oyster beds there.

No efforts have ever been made by this department to ascertain whether any deep-water oysters exist in the sea around the coasts. On the north side of Prince Edward Island, with northerly gales of wind, oyster shells are reported to wash ashore, which would lead one to believe that oyster beds do exist outside ; the same has also been reported of Buctóuche, N.B.

Oysters and scallops are found in the English Channel and North Sea, in depths varying from ten to thirty fathoms water, and there is no reason why oysters should not be found along our own shores, where so many bays and rivers which contain oysters discharge their waters into the gulf.

OYSTER FISHING—ITS METHODS.

Various ideas have been formed with regard to the easiest and most advantageous mode of fishing oysters, and the implements used are many, a description of which will be given below.

Dredges are about the only implement used in Europe ; they are also used to a great extent in the United States, but are very little used in the Dominion, although a very necessary machine, where areas require cleaning, and on cultivated areas they are most economic in the saving of time and labour. They are made of various sizes for the different localities where they are worked, some are made to be worked by hand, others are hove up by a hand winch, and in some cases a steam winch is used. On shallow bottoms the former is mostly worked.

A full description of this implement will be found in the special oyster report, page 339.

The nets of these dredges are often made of iron links for the lower part or back, as there is considerable wear as it is dragged over the bottom, while the upper portion of the uet is made of a lighter material, such as twine, and the action of the water through the meshes keeps the net in an open position.

Tongs are used in many parts of the United States, and chiefly in Prince Edward Island ; it is formed of two rakes, joined together with a bolt so arranged that both handles will work easily about one-third the length of the handle from the rake ; it varies in size and length of handles according to the depth of water it is used for, the average length of handle being 14 or 16 feet long, the width of rake about 30 inches, where curved iron teeth, about 3 inches long, and one and a half inches apart are fixed ; when working with the tongs the boat is moored over an oyster bed, and moved about from time to time, as required ; the tongs are then used on the bottom, and collects oysters and weed, which may lay in its way while being drawn together ; on raising the tongs to the surface, the contents are culled out, saving the oysters, while the shells are returned to the water, where they settle on the bottom, as the tide carries them. A man can take a small row-boat and pair of tongs and is enabled to go where he pleases to fish, while dredges require a heavier boat, with sails, &c.

The single-handled rake, a rude and destructive implement, is used where the bottoms are softer, and also from an open boat, moored. This varies in size, the rake is about 30 inches wide, with curved teeth, from 8 to 10 inches in length, and arranged about one and a half inches apart, with a handle from 15 to 25 feet long ; it will collect the shells and oysters from the bed all around into uneven banks, breaking through the crust of the beds, and doing more damage to a piece of ground than the good they reap by their catch ; by this method the beds are continually becoming more contracted. An oyster area requires to be as even as possible, and where depressions are made on oyster beds, the sediment soon settles, making mud holes, where, eventually, the eelgrass will grow and the beds soon become covered over.

I have seen Indians use the flat eel spears bent round at right angles, making a hook of it, which they will fish among the rocks and ledges, and are expert in obtaining oysters by that method.

In Cape Breton an instrument called a dip-net is used. It consists of a circular or oblong band of iron about 8 inches in diameter, and when oblong will have a depth of 12 inches by 8 ; at the back or bottom of this is attached a small net, made either of wire or twine, and fixed to a pole about 10 or 12 feet long for a handle ; when an oyster is seen from the boat it is scooped into the dip-net. The water is clear as a rule, the bottom being easily visible at a depth of 6 to 9 feet from the surface. At times when there is wind and it is difficult to see the bottom, some of the fishermen will sprinkle oil on the rough water around their boat enabling them to see the bottom more clearly. But the most crude of all was a split stick which was used in Cape Breton ; the person using it will be looking over the boat's side and, on seeing an oyster, this pole, which is split at the lower end into four parts and slightly opened is thrust over the oyster, and when a firm hold is found to have been obtained, the stick is raised and the oyster extracted ; it is a slow method, but these men obtain a very good sample of oysters, and no very small ones are obtained. It is seen from the above that all sorts of schemes are formed to remove the oyster from its bed, and very few persons are to be found who would lay any small oysters on these beds for development or improvement.

MUD-DIGGING AREAS.

Several applications were made by the farmers to have some alteration made in the mud-digging areas, and, in compliance with instructions, I have been over the East, West, North and Johnson's Rivers, have drawn fresh lines and limits, and reserved further areas for the use of oyster fishermen. The present arrangements are satisfactory to all parties concerned, and a copy of the metes and bounds has been left with the fishery officer in Charlottetown for future reference, the original having been placed on file in this department.

SIZE LIMIT.

My attention has been drawn to the size of some of the oysters shipped to market, and when speaking to the fishermen they state their oysters are within the size limit, as they claim these small oysters are round, whereas the round oyster belongs to Caraquette, and the following regulations were originally intended for those oysters only, but it is now made common use of wherever oysters are caught. Clause 6 of the oyster regulations reads as follows :—" No person shall fish for, catch, kill, buy, sell, or have in possession, any round oysters of a less size than two inches in diameter of shell, or any long oysters measuring less than three inches of outer shell." I would strongly advise that this regulation should be altered so as to read as follows :—" No person shall fish for, catch, kill, buy or sell any oysters measuring less than three inches of outer shell, with the exception of those taken from Caraquette and the waters of Gloucester County. Three inches of shell will give a very small oyster, and that size is the lowest limit that it is possible to give to be of any benefit or value to the industry.

I have the honour to be, sir,
Your obedient servant,

ERNEST KEMP, *Oyster Expert.*

APPENDIX No. 12.

FISH CULTURE

1898

REPORT OF PROF. EDWARD E. PRINCE, COMMISSIONER AND GENERAL INSPECTOR OF FISHERIES FOR THE DOMINION OF CANADA, FOR THE YEAR 1898.

OTTAWA, 31st December, 1898.

To the Honourable
Sir LOUIS H. DAVIES, K.C.M.G., &c., &c.,
Minister of Marine and Fisheries,
Ottawa.

SIR,—The following report, which I have the honour to submit, embraces a review of the operations carried on in the several fish hatcheries in the various provinces during the past season. The success attending the fish culture work at these establishments has been of a very successful character, notwithstanding the special difficulties that arose in the case of five of the hatcheries, owing to the impossibility of obtaining the customary supplies of the parent fish from the usual localities. Thus, the Carleton salmon pond, St. John, N.B., was not available, and the Grand Falls and Bedford salmon hatcheries were placed in a serious predicament. Extensive dredging operations, connected with the deepening of the St. John harbour to accommodate the ocean steamers, and the building of new wharfs and additional railway tracks, all in close proximity to the salmon pond, were so serious an interference that it could not be utilized for retaining parent fish. Hence, special steps had to be authorized in order to obtain supplies of ova on the Miramichi River, and the results were detailed in last year's report of the South Esk hatchery. Again, in connection with the procuring of lake-trout eggs for the Newcastle, Ottawa, Magog and Grand Falls hatcheries, it has long appeared desirable to try some plan alternative to that pursued for a period of ten years, viz., the use of departmental nets in a restricted locality, and the fishing of certain stations in Colpoy's Bay, Wiarton, Ont., with plant owned by the department. The fact that, season after season, officers from United States hatcheries obtain abundant supplies of lake-trout eggs from the fish taken by Canadian fishermen in Lake Superior, suggested the feasibility of arrangements with the fishermen adjacent to Sault Ste. Marie, Ont., whereby the fish taken in the nets in a spawning condition might be manipulated by experienced departmental officers, and the ova saved and transferred in the usual way to Newcastle, Ont. As is well known, the present close season for the great lake-trout commences coincidently with that for lake-whitefish, and is, in reality, too late. A great proportion of lake-trout spawn before the end of October, and the fishermen, in consequence, capture a good many ripe fish, which are shipped to the markets, and their spawn destroyed and lost, excepting those supplies of spawn which, with the cognizance of this department, and for many years with official sanction from Ottawa, were taken by United States officials for their hatcheries. The Sault Ste. Marie experiment was not successfully carried out, as the fish appeared to be unusually late in coming into the shallows, and the Wiarton fishing stands were again resorted to in order to avoid the danger of failure. The Sandwich hatchery also experienced peculiar difficulty in securing spawn, on account of the late appearance of the parent whitefish, and when the schools did approach the usual breeding grounds it was not possible to capture as large a supply of fish as usual. Mr. Parker, the officer in charge at Sandwich, reported, however, that not so many fish were necessary, as those taken were in the best possible condition for hatchery purposes, and were just upon the point of spawning. He remarked: "The fish never were known to be so late in coming into the river. Eggs were first brought into the house on the 22nd day of November, about three weeks later than previous years."

It is very satisfactory to note that there was actually no breakdown in the measures taken for securing eggs at any of the places referred to, notwithstanding that the circumstances were so unusually unfavourable, and the difficulties in the way of success so grave. A failure to secure eggs for the New Brunswick hatcheries, or non-success at Sandwich or at Wiarton, would have momentous results, as other distant hatcheries depend upon these western supplies, and could not be operated were an insufficient quantity of ova obtained. In the case of the Bay View lobster hatchery, N.S., the difficulty experienced in the previous season was felt again, and it was not possible to procure the ample supplies which were secured with facility four or five years ago. Last year the officer in charge reported that, while lobsters were quite plentiful, females carrying eggs were, for some unknown reason, very scarce, and it was necessary to resort to Canso, and localities to the east, in order to make up the deficiency. This season the failure to secure full supplies is attributable to two causes, viz., the extremely stormy weather, which prevented the hauling of the traps, and the prevalence of an epidemic of so serious a character, in the locality of the hatchery, that several canneries could not continue work, owing to lack of hands. The lobster eggs placed in the incubators amounted to eighty-five millions, a quantity slightly less than that of the previous season, but much below that of the preceding four years, 1893-96, when an average of 145,000,000 of lobster eggs was placed in the incubators. The hatchery has been in operation for a period of eight years, and many parties have exhibited an impatience at the uncertainty of the results. So long as the establishment was in its early experimental stage, neither the trained expert nor the practical man could fairly give any opinion on the effect of the lobster hatchery. The slow rate of growth in the lobster, as compared with many other marine creatures, rendered impossible a safe judgment until the lapse of adequate time. Even now, opinion is divided, but many parties with large interests in the lobster-packing industry are strongly favourable to artificial propagation, in spite of the uncertain and slender evidence available. "I do not see how the hatchery can help being a benefit," said an important Nova Scotia packer recently.* "I have seen hundreds of millions of young fry, and could see the growth and strength of the young lobster in a few days. They were lively, healthy and growing. Unless they die, the hatchery must be of very great assistance. It is conducted on very successful and admirable lines, but it is, of course, hard to determine results in the Northumberland Straits."

The success which I am able to record, under the very difficult conditions experienced, is testimony to the efficiency of the system under which the fish culture operations are being carried on, and its adaptability to unforeseen circumstances. It is also a clear proof of the energy and ability of the departmental officers entrusted with the duties in question, and of their readiness to overcome exceptional obstacles, and thus avoid total failure in the season's operations.

Of the general benefits to the waters of the Dominion by fish culture operations, when conducted in a capable manner by experienced officers, it is unnecessary to say anything. In former years the fish culture reports contained lengthy extracts, from various sources, bearing testimony in favour of hatcheries. It is interesting to note, however, that recently an expression of opinion has been published on the Pacific coast, and on the Atlantic coast, which has peculiar force emanating, as it does, on the one hand from a board of leading commercial men, and on the other hand from a practical man of long experience on a river which ranks as, perhaps, the premier salmon river on the Atlantic coast. The British Columbia Board of Trade in their report for 1898, just issued, say :

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* Evidence given before the Lobster Commission, 1898-99.

" It was expected that the salmon pack of 1897 would be large, but the total pack of 1,015,577 cases, an increase of 58 per cent over and above the previous highest record exceeded the hopes of the most sanguine. The increase was almost exclusively from the Fraser River, and is accounted for principally by the hatchery established there in 1884."

The recently expressed opinion of an experienced resident on the upper Metapedia waters points in the same direction, and is favourable to the Restigouche salmon hatchery, which, for twenty-five years, has supplied fry to the Metapedia and the Restigouche. Writing from Glen Emma, via Assametquaghan, P.Q., he says :

" My experience has covered a period of twelve successive seasons and I have been a close observer of the salmon and their habits, and I have no hesitation in saying that the run of salmon is increasing for the last three years on the Metapedia and Causapscal Rivers. Probably the fact that this is so is due to several different causes. No doubt the young fry distributed on the Metapedia has been a material advantage to the river, and another reason I would say is that the Causapscal River has had protection, and an increased run of parent fish in that river is the result. There is no doubt that the Metapedia is well stocked with young fish, and I also notice that the big fish are more evenly distributed along the pools, which plainly proves that the stock is increasing. I know several places where, a few years ago, it was a rarity to see more than one or two fish, and it is easy to see twenty or more now."

That the incubation of fish eggs in hatcheries, and the proper planting of the fry, under trained and qualified superintendence, results in substantial gain to the waters planted is established beyond dispute by the case of the rivers of New Zealand. That colony had no trout or salmon of any kind a little over a quarter of a century ago. Now the inland and littoral waters abound with fine fish. It is true that the experiment commenced twenty-six years ago of introducing salmon and various species of trout has not had precisely the results expected. For reasons of a technical and scientific character, the planting of salmon has not been a marked success, although land-locked salmon grow to a size of three or four pounds, and produce eggs for five or six years, yet the experiment, so far as sea salmon are concerned, has had practically negative results. Not so with the trout. These which, under normal conditions in English and Scotch waters, would not exceed three to five pounds (though twelve and fourteen pound monsters are recorded) attain, in New Zealand waters, the abnormal weight of twenty-five to thirty-six pounds, and acquire the habit of migrating to the sea. Fine trout are abundant there now, though, until artificially propagated and introduced, there were no trout in those waters at all. Mr. W. H. Spackman, of Christchurch, N.Z., says :

" Their introduction into the South Island has been a marked success, most of the rivers of that island being well enough stocked to afford magnificent fishing for trout. In the North Island they have been successfully introduced into most of the rivers as far north as Taranaki, on the west coast, and the inland portions of Hawke's Bay, on its eastern side. As the work of acclimatization progresses year by year, rivers further north are being stocked, and no doubt the central system of rivers running north will be stocked at high altitudes, where found suitable."

The opinion of so well known an authority as Mr. Henry Ffennell on this question is interesting, in connection with the foregoing :

" As we all know, the establishment of trout in many waters at the antipodes (which formerly were absolutely barren of that variety of fish) has been successfully accomplished. Many rivers at the other side of the world are now plentifully stocked, and yield fish in abundance, and of remarkable size. There are many persons who hold the confident belief that true salmon *(Salmo salar)* are also to be got in plenty in those far-away waters, the offspring of ova originally sent from England. I think, however, it is very doubtful if such really is the case, and I do not know that any reliable evidence can be produced to prove it. Rumours, indeed, come to hand from time to time, to the effect that certain waters at the antipodes yield salmon in more or less abundance, and specimens have been sent to England for identification. Dr. Gunther, and others, have examined several specimens of these so-called salmon, but I think I am correct in saying that in no case was he, or any other competent authority, satisfied that the specimens forwarded were examples of offspring from English-bred salmon."

One of the main factors in ensuring successful results is the suitability of the waters to be stocked. Many other considerations have to be kept in view by the expert, and the necessity of efficient trained assistance is apparent.

As is usual in this report, a schedule is given below of the total quantities of each species of fish put out from the hatcheries as a whole, followed by a detailed table, showing the quantities, description and species of fry distributed from each establishment respectively, with a statement of the numbers of advanced eggs sent to and received by other hatcheries.

A general statistical table has also been prepared, in which are exhibited the gross numbers of fry of all kinds bred and turned out of the hatcheries and planted in the various waters of the Dominion, during a period covering practically a quarter of a century, prior to which there was only one hatchery in operation. From 1868 to 1873 the Newcastle hatchery appears to have turned out something over a million fry. In 1874 the Restigouche salmon hatchery and the similar institution on the River Miramichi, N.B., produced, respectively, 100,000 and 60,000 fry. Next year (1875) two new buildings at Tadousac and Gaspé were operated, and resulted in the planting of 60,000 and 110,000 salmon fry in each case. In 1876, whitefish were hatched for the first time at the Sandwich establishment, on the Detroit River. The five Dominion hatcheries in operation in 1875 were but the initial stage in the growth of fish culture work, and the number of hatcheries had trebled twenty years later, though one small hatchery was operated only a few years, ceasing in 1887, and being destroyed by fire at a later date ; but the Bay View (lobster) hatchery, in Nova Scotia, was opened in 1891, and the total number of active establishments was thus maintained.

Exclusive of the lobster, the grand total quantity of fry of fishes planted in Dominion waters from the several hatcheries, since fish culture operations began, is not less than 1,600,818,200. During last season (1898) there were planted, exclusive of lobster fry, in round numbers, a total of fry amounting to one hundred and seven and a half millions. Including lobsters, the grand total of fry amounts to 2,428,118,200 for the period of twenty-six years. The grand total for the year 1898 is 192,477,000.

QUANTITIES OF FRY DISTRIBUTED.

The following table shows the numbers planted of various species propagated :—

Salmon *(Salmo salar)*	5,152,000
Sockeye (Pacific) Salmon *(Oncorhynchus nerka)*	5,850,000
Salmon-trout *(Salvelinus namaycush)*	3,185,000
Lake-whitefish *(Coregonus clupeiformis)*	93,290,000
Lobsters *(Homarus americanus)*	85,000,000
	192,477,000

For facility of reference, the further table below specifies the name and location of each hatchery, also the quantities of young fish and of eggs in an advanced condition supplied by each establishment, respectively, and the species of fry or the kind of eggs so distributed during the season.

No.	Name of Hatchery.	Number of Fry distributed.	Number of Eggs sent to other Hatcheries.	Number of Eggs received from other Hatcheries.	Species.
1	Sydney, N.S.	Not in operation.			
2	Bedford, N.S.	3,000,000	...	3,000,000	White fish.
3	Bay View, N.S.	85,000,000	...	...	Lobsters.
4	Dunk River, P.E.I.	Not in operation.			
5	St. John River, N.B.	260,000	...	600,000	Atlantic salmon.
	" "	470,000	...	500,000	Great Lake trout.
	" "	2,560,000	...	3,000,000	White fish.
6	Miramichi, N.B.	1,557,000	*600,000	250,000	Atlantic salmon.
7	Restigouche, P.Q.	1,135,000	250,000	...	"
8	Gaspé, P.Q.	Not in operation.			
9	Tadoussac, P.Q.	2,200,000	...	...	"
10	Magog, P.Q.	2,950,000	...	3,000,000	White fish.
	"	150,000	...	150,000	Great Lake trout.
11	Newcastle, Ont.	1,525,000	1,750,000	...	"
	"	2,800,000	...	3,000,000	White fish.
12	Sandwich, Ont.	71,000,000	14,000,000	...	"
13	Ottawa, Ont.	1,980,000	...	2,000,000	"
	"	1,040,000	...	1,100,000	Great Lake trout.
14	Selkirk, Man.	9,000,000	...	...	White fish.
15	Fraser River, B.C.	5,850,000	...	...	Sock-eye salmon.
	Total	192,477,000	16,600,000	16,600,000	

* Received in very poor condition.

The following table shows the total numbers of fry of all kinds which have been distributed from the Dominion hatcheries since the commencement of each up to the present time, including the year 1898 :—

STATEMENT showing the Places where, and the Years in which, the several Fish
Establishment, annually, since they

	Year.	Ontario.			Quebec.			
		Newcastle.	Sandwich.	Ottawa.	Magog.	Tadoussac.	Gaspé.	Restigouche.
		Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.
1	1868-73..	1,070,000	....	....	....	....	....	....
2	1874 ...	350,000	....	....	....	....	....	100,000
3	1875....	650,000	....	....	....	60,000	110,000	600,000
4	1876.	700,000	8,000,000	....	....	150,000	50,000	300,000
5	1877 ...	1,300,000	8,000,000	....	....	1,180,000	1,051,000	600,000
6	1878....	2,605,000	20,000,000	....	....	707,000	650,000	1,015,000
7	1879 ..	2,602,700	12,000,000	....	....	1,250,000	1,597,000	1,470,000
8	1880....	1,923,000	13,500,000	....	....	1,155,000	730,000	1,500,000
9	1881 ..	3,300,000	16,000,000	....	200,000	334,000	500,000	740,000
10	1882....	4,841,000	44,000,000	....	975,000	660,000	530,000	1,400,000
11	1883 ...	6,053,000	72,000,000	....	250,000	995,000	520,000	300,000
12	1884 ...	8,800,000	37,000,000	....	100,000	985,000	859,000	940,000
13	1885....	5,700,000	68,000,000	....	300,000	720,000	290,000	660,000
14	1886 ..	6,451,000	57,000,000	....	1,400,000	1,627,000	576,000	1,380,000
15	1887....	5,130,000	56,500,000	....	675,000	900,000	630,000	1,500,000
16	1888. .	8,076,000	56,000,000	....	3,475,000	850,000	800,000	1,720,000
17	1889....	5,846,500	21,000,000	....	2,800,000	1,600,000	450,000	1,280,000
18	1890 ...	7,736,000	52,000,000	5.732,000	2,875,000	1,700,000	806,000	2,396,000
19	1891....	7,807,500	75,000,000	7,043,000	3,050,000	1,300,000	1,000,000	1,750,000
20	1892....	4,823,500	44,500,000	4,909,000	2,400,000	624,000	965,000	1,240,000
21	1893....	9,835,000	68,000,000	6,208,000	3,600,000	2,060,000	910,000	883,000
22	1894....	6,000,000	47,000,000	4,480,000	2,035,000	1,975,000	850,000	1,080,000
23	1895....	6,000,000	73,000,000	3,210,000	3,350,000	2,060,000	675,000	2,885,000
24	1896....	5,200,000	61,000,000	3,950,000	3,400,000	2,500,000	300,000	1,250,000
25	1897....	4,200,000	72,000,000	4,100,000	4,500,000	3,272,000	1,100,000	2,100,000
26	1898....	4,325,000	71,000,000	3,020,000	3,100,000	2,200,000	....	1,135,000
	Totals..	121,325,200	1,052,500,000	42,653,000	38,845,000	30,864,000	15,949,000	30,224,000

Hatcheries have been erected; also the number of Fry distributed from each were built, including the Year 1898.

New Brunswick.		Nova Scotia.			P.E. Island.	British Columbia.	Manitoba	Totals.	
Miramichi.	St. John River.	Bedford.	Sydney.	Bay View Lobster Hatchery.	Dunk River.	Fraser River.	Selkirk.		
Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	
...	...	...	...	...	...	...	...	1,070,000	1
60,000	...	...	...	...	...	...	...	510,000	2
150,000	...	...	...	...	...	...	...	1,570,000	3
60,000	...	395,000	...	...	...	...	...	9,655,000	4
320,000	...	1,000,000	...	...	...	...	...	13,451,000	5
665,000	...	1,400,000	...	...	...	...	...	27,042,000	6
1,025,000	...	1,740,000	...	...	...	...	...	21,684,700	7
805,000	170,600	730,000	...	...	500,000	...	...	21,013,000	8
770,000	50,000	680,000	...	...	375,000	...	...	22,949,000	9
640,000	588,000	850,000	315,000	...	1,060,000	...	...	55,859,000	10
925,000	72,600	800,000	659,000	...	1,210,000	...	...	83,784,600	11
795,000	811,000	1,000,000	853,000	...	1,000,000	...	...	53,143,000	12
900,000	155,000	670,000	772,000	...	1,100,000	1,800,000	...	81,067,000	13
945,000	2,181,000	966,000	1,179,000	...	400,000	2,625,000	...	76,724,000	14
900,000	2,479,000	4,230,000	1,415,000	...	500,000	4,414,000	...	79,273,000	15
1,290,000	4,142,000	4,390,000	1,559,000	...	...	5,807,000	...	88,109,000	16
850,000	3,570,000	3,850,000	2,034,000	...	...	4,419,000	...	47,700,000	17
1,022,000	3,492,000	3,860,000	1,953,000	...	...	6,640,000	...	90,213,000	18
1,503,000	3,165,000	2,550,000	1,000,000	7,000,000	...	3,603,800	...	115,772,300	19
1,310,000	2,378,000	2,620,000	6[illegible]0,000	63,500,000	...	6,000,000	...	135,959,500	20
975,000	3,299,000	3,180,000	...	153,600,000	...	5,764,000	...	258,314,000	21
1,010,000	4,096,000	3,805,000	288,000	160,000,000	...	7,800,000	14,500,000	254,919,000	22
1,200,000	4,060,000	3,815,000	195,000	168,200,000	...	6,390,000	19,000,000	294,040,000	23
1,430,000	4,068,000	4,225,000	243,500	100,000,000	...	10,393,000	4,500,000	202,459,500	24
1,558,000	4,155,000	5,450,000	496,000	90,000,000	...	5,928,000	...	198,859,000	25
1,557,000	3,290,000	3,000,000	...	85,000,000	...	5,850,000	9,000,000	192,477,000	26
22,665,000	46,222,200	55,200,000	13,652,000	827,300,000	6,145,000	77,433,800	47,000,000	2,428,118,200	

In addition to the regular work of incubating, hatching and distributing the various species, specified in the foregoing tables, the department has sanctioned, or actively participated in other fish culture work not coming under the Dominion fish-breeding operations proper.

Thus, in 1896, a most important scheme was successfully carried out for transplanting certain kinds of fish, shell-fish, &c., from the Atlantic to the Pacific coast. The scheme included the transportation across the continent, alive, of lobsters, oysters and black bass. The year before (1895) a quantity of large-mouthed black bass were introduced into certain waters in western Ontario, with the cordial co-operation of the Ontario Government. The Dominion and provincial Governments mutually bore the cost of the experiment. These attempts were attended with marked success, and have been fully reported on in the departmental reports for the respective years mentioned. In 1897, Mr. D. G. Smith, provincial fisheries commissioner, New Brunswick, entered into correspondence with the department respecting the suggested hatching of sea-trout. The department, for the last five or six years, it may be pointed out, has strictly confined the hatching operations in the various establishments to species of fish that are primarily of commercial importance. The whitefish and great lake-trout or salmon-trout have no game qualities, but from an economic point of view, and from the net fisherman's point of view they are of supreme value; so also of the salmon. A large body of salmon fishermen depend upon these fish for their livelihood. Hence, the fish culture operation have been restricted to the kinds of fish just referred to. As there was ample accommodation for some thousands of trout fry in the South Esk hatchery, Mr. Isaac Sheasgreen was instructed to make preparations to receive the trout eggs and to co-operate with thewith the provincial commissioner in order to secure success in the hatching operations.

Mr. D. G. Smith secured about 30,000 sea-trout ova, and these were duly incubated in the Dominion hatchery and planted by the commissioner in tributaries of the Rivers Miramichi and St. John.

A second experiment, viz., the planting of adult black bass in certain lakes in Haliburton Co., Ont.. was carried out late in the fall, under peculiarly difficult circumstances. The results, though more limited than had been anticipated, were perfectly successful. and a batch of thirty very fine black bass was transferred from Otter and Salmon Lakes in the Parry Sound district to Gordon Lake, near Rock Lake, on the Ottawa, Arnprior and Parry Sound Railway. As this fine sporting country has only recently been opened up, the planting of a game fish, like black bass, in the beautiful waters adjacent to the railway is an important step, and will add to the attractions of this territory, which is rapidly becoming a resort for summer residents and anglers. Mr. Andrew Fleck, of Ottawa, was active in carrying out the scheme, and authorized Mr. Ross, an experienced official on the railway, to render all assistance. Mr. Andrew Halkett, of Ottawa, an officer of this department, very efficiently superintended the work, which commenced on October 13, when twenty splendid fish were captured. On the following day (the 14th) the weather was extremely inclement and stormy. and ten fish were taken. On Saturday, the 15th of October, these thirty black bass, many of them unusually large specimens, were shipped in fine condition, in the large fish-cans belonging to the department. Most of them were of the large-mouthed species *(Micropterus salmoides)*, and being fully grown. healthy adult fish, an abundant supply of young fry will be ensured in Gordon Lake and adjacent waters during the summer of 1899. Amongst others who took an interest in this experiment was Mr. Bartlett, superintendent of the Algonquin Park. Mr. Andrew Halkett had already some experience of the Gordon Lake waters. and this was of great value in carrying out the scheme. That officer reported: "In the spring of the year. when planting great lake-trout fry in Rock Lake, accompanied by Mr. Ross, I had visited Gordon Lake, and noted its character. * * * During the few days I spent at Otter Lake, I plainly saw the necessity of a thorough examination of our lakes relative to the natural conditions of fish life in them." The lakes of that region are, as a rule, stocked with speckled trout and gray trout, and the introduction of black bass into certain limited waters will be followed with interest. The work of fish culture is, indeed, of the most varied character, for it embraces not merely the restocking of waters with fish native to them, and which may have suffered depletion, but it includes, also the planting of such waters with new kinds, the extension, as well as the recuperation of fishery resources. Few subjects demand greater care and a more intimate knowledge of the life and habits of fish than fish culture. The ignorance of so-called practical men has not only rendered non-effective schemes of fish culture otherwise well-devised and full of promise, it has brought the whole matter into disrepute in the eyes of many. Unless fish culture be based on scientific knowledge, it is as likely to do harm as good. As Mr. A. D. Berrington said in the English fisheries report, 1887: "The artificial propagation and acclimatization of fish is one of the hobbies of the day; and the results which it is producing are of great value. * * * * We must not, however, expect too much from artificial propagation. The time may come, and probably will, when fish farms may be made a profitable means of supplying our markets with the better kinds of fresh-water fish; but for increasing the main stock of our rivers, there is no course at once so efficient and so economical as to assist the natural breeding power of the fish, by the purification of the water, by the removal of obstructions, and by legitimate protection."

The policy in the Dominion has been a wise one, *i.e.*, fish culture hand in hand with fishery protection, and no greater error can be given currency than that which, by some authorities, has been urged as at once safe and satisfactory, viz., the removal of all protective and preservative restrictions, close seasons and the like; and the extension of artificial fish culture. Experience in various countries has proved the truth of the opposite view, and has shown that fish culture must be regarded as a supplement to fishery laws. With strict and proper fishery regulations there is no more valuable or beneficial adjunct than an efficiently conducted scheme of artificial propagation.

I have the honour to be,
Your obedient servant,

EDWARD E. PRINCE.
Dominion Commissioner of Fisheries.

APPENDICES.

1. FRASER RIVER HATCHERY, BRITISH COLUMBIA.

NEW WESTMINSTER, B.C., 1st December, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I have the honour to submit my annual report of operations in connection with the Fraser River fish hatchery, for the year 1898.

During the months of March and April, I turned out from the hatchery, 5.850,000 Sockeye *(Oncorhynchus nerka)* fry. Of these, 4,000,000 were liberated in Harrison River, and the remainder, 1,850,000 in Pitt Lake. The young fish were strong and lively, and were in fine condition when liberated.

During the summer, extensive repairs were made on the hatchery premises at "Bon Accord," consisting of new sills, joists and floor, and the roof newly shingled, and a new outfit of tanks and hatching troughs, involving an expenditure of over $1,000. The new tanks are so constructed that, if necessary, they can be taken apart at any time and rebuilt without damage to the material.

On the 27th September, I sent Wm. Roxburgh, foreman, and John Newman, to Morris Creek, Harrison, with the necessary material to build traps, and make the necessary preparations for securing ova wherewith to stock the hatchery. This proved to be a longer and more difficult undertaking than I had anticipated, as, owing to "jams" of timber and brush, the creek has been diverted from its former channel and has forced an additional outlet into the lake, making it more difficult to trap the parent salmon. After the preparations were completed, and the first shipment of ova, consisting of 750,000 sent to the hatchery, a sudden rise of water in the creek washed out the traps and allowed a large number of gravid salmon to escape. It was the 7th of November when I closed operations at Morris Creek; the salmon were scarcer during the month of October than for a number of years during the same season. 5,500,000 eggs were secured and deposited in the hatchery in good condition, 500,000 less than I wished to get. Most of the salmon handled were smaller than usual and yielded a less number of eggs. The unfavourable conditions which existed at the creek, together with the necessity of replacing a number of articles which I had removed to my office from the hatchery, for safe keeping, when the building was undergoing repairs, but which were lost in the fire of the 10th of September, has caused the expense of the service to be slightly greater than on some former years, in proportion to the number of eggs obtained. The boats and plant used during the season have been cared for and put in safe keeping.

I have the honour to be, sir,
Your obedient servant,

JOHN McNAB,
Inspector of Fisheries, and officer in charge of
Fraser River Fish Hatchery

2. BEDFORD HATCHERY, NOVA SCOTIA.

Bedford, N.S., 26th November, 1898.

To **Prof. E. E. Prince**,
Dominion Commissioner of Fisheries,
Ottawa.

Sir,—I beg to submit my report of operations at the Bedford hatchery, for the season of 1898.

Since 1894 this hatchery has received its supply of salmon ova from fish caught in the St. John River, at St. John, N.B., but last season, owing to extensive works at the dock in Carleton, the pond could not be safely used to retain the parent fish until the spawning season, and not having any appliances for deep-water fishing elsewhere, I was unable to secure a supply of ova, as heretofore..

The usual quota of whitefish ova was received from the Sandwich hatchery, the fry successfully hatched, without loss, and planted in the lakes herein named.

Whitefish.

Lake Ainsley, Inverness County	700,000
Lake au Law, Inverness County	700,000
Brazil Lake, Yarmouth County	700,000
Williams Lake, Halifax County	200,000
Paradise and Round Hill Lakes, Annapolis County	700,000
Total	3,000,000

On the 1st and 5th instants, I obtained at and received from the Carleton Pond, St. John, 900,000 salmon ova, which are laid down in the troughs, and are, to all appearances, strong and healthy.

I inclose herewith a letter from Gerald B. Ternan, Esq., barrister, of Halifax, who has fished in this and other lakes where salmon fry have been planted.

Halifax, N.S., August 18, 1898.

Alfred Ogden, Esq.,
Fish Hatchery, Bedford.

Dear Sir,—Referring to our conversation of yesterday about the fish in Cocked Hat Lake, I find on looking up some notes I made at the time that Dr. Ternan and I spent an afternoon at this lake and caught, in all, five fish, the exact weight being as follows :—one of 2¼ pounds, two of 2 pounds, one of 1½ pounds, and one of ½ pound. On several other occasions this season I got fish from ½ to 2 pounds in weight. The fry, I believe, were put in the lake the last year Mr. Wilmot was at the hatchery (1893), so I have been told by those who placed them there. I may say also, as tending to show that salmon do increase in lakes where there is no outlet, that some five or seven years ago some fry were put into Spectacle Lake. Two summers ago I and a couple of friends spent three days there and caught twenty fish—two trout, eighteen salmon—the latter running from ½ pound to 3 pounds in weight. And one fish hooked there (but lost) would measure, I am sure, 30 inches in length. One of the party had his tackle carried away by what was either a bass or a large salmon, and as there are no bass in the lake, as far as known, I am induced to believe it was a salmon.

These fish are, as a rule, as lively as any I have caught in running waters, and give all the sport one would desire. (They are also good eating.) There are eels in both lakes, going to show that eels are not so destructive to the fry as is supposed.

The fish in these lakes are early—cannot be caught with a hook after about June 1st—although I have seen the lakes fairly bubbling with them during this month.

If, from the foregoing, the department could be induced to make regular tests of lake-stocking with salmon fry, I believe that the result would not be disappointing.

Yours very sincerely,

Gerald B. Ternan.

In June, 1893, some 500 salmon fry, from this hatchery, were placed into Cocked Hat Lake, a small sheet of water (land-locked) containing about four acres, one and one-half miles north-west from the hatchery.

They seem to have been forgotten until May last, when some anglers who visited the lake found the water fairly alive with land-locked salmon, measuring from 7 inches up to 22 inches in length, and weighing up to three pounds.

As they were caught during the time I was at Pictou, I saw but one specimen, which was twenty inches long and weighed two and a half pounds, and contained ova.

Whenever I can secure a catch of these fish I will forward some to the department for inspection.

During the past summer I have thoroughly overhauled and patched the breeding troughs, which are fast going to decay ; over 100 square feet of tin was required for the work. These repairs are not permanent, and new troughs are required.

The verandah at the front of the building is so much decayed by age that it will be necessary to construct a new one.

The main building needs painting ; it does not correspond with the other buildings and the grounds, which, in my opinion, are neat and attractive.

I am, sir, your obedient servant,

ALFRED OGDEN.

3. ST. JOHN RIVER HATCHERY, NEW BRUNSWICK.

GRAND FALLS, N.B., 25th November, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—The following report relating to the operations carried on at the St. John River fish hatchery, during the current year, is respectfully submitted :—

On account of the building and repairing of the wharf in the St. John harbour, in close proximity to the Carleton retaining pond, wherein the parent salmon were usually kept impounded until ripe for spawning, the said pond was not considered fit for that purpose last season. Consequently, it became necessary to adopt some other means of procuring salmon eggs to stock this hatchery last year.

In the latter part of June, 1897, I happened to be in St. John, and I made it my business to visit the pond, and after consulting the overseer, Mr. Joseph O'Brien, I came to the conclusion that no ova would be obtained from that source last season, therefore I began to look around for a probable means of getting eggs to stock the hatchery. Last season, having been well acquainted with some of the members of the Tobique Fishing Club, and happening to stand well in their estimation, I concluded to ask for the privilege of capturing parent salmon to procure sufficient eggs to stock the house that fall, a privilege that was freely and generously granted to me. I reported the kind offer to the department. but for reasons, no doubt of an official character, they did not accept the offer. I was then informed that seven hundred thousand salmon eggs would be supplied from the Miramichi hatchery. In due time I received, by approximation, six hundred thousand eggs, in very poor condition when they arrived, and, notwithstanding all our efforts they continued to fail throughout the entire season. On March the third I received a further supply per Mr. William Parker, consisting of 3,000,000 whitefish eggs from Sandwich, and 500,000 salmon-trout eggs from Newcastle, Ontario ; they all arrived in good condition, and continued to do well all through the period of incubation. The hatchery was in first-class condition last season for the hatching of the eggs, with a plentiful supply of good water.

We commenced the distribution of the young fry on April 26th, and continued the work until the last of the fry were planted in the several waters where applied for ; the balance being put into those waters which were most suitable and convenient.

Distribution of Whitefish Fry.

Harvey Lake, York County	320,000
Lake George, York County	640,000
Lake Yohoe, York County	320,000
Oromocto Lake, York County	320,000
Foster Lake, Charlotte County	640,000
Baldhead Lake, York County	320,000
	2,560,000

Distribution of Salmon-trout Fry.

Harvey Lake, York County	30,000
Shogamoc Lake, York County	30,000
McFadden Lake, Albert County	40,000
St. John River, above Indian Town	40,000
Pleasant Lake, King's County	80,000
Butler Lake, King's County	40,000
Conners Lake, King's County	40,000
Dunn Lake, King's County	40,000
Roleston Lake, Victoria County	30,000
Portage Lake, Victoria County	30,000
Long Lake	30,000
Dam at the hatchery, Victoria County	40,000
	470,000

Distribution of Sea Salmon Fry.

St. Croix River, Charlotte County	96,000
Tobique River, Victoria County	96,000
Salmon River, Victoria County	24,000
Skiff Lake, Carleton County	24,000
St. John River, at the hatchery	20,000
	260,000

RECAPITULATION.

Salmon fry	260,000
Salmon-trout fry	470,000
Whitefish fry	2,560,000
Total number of fry distributed the present year	3,290,000

If the sea salmon eggs had done as well as they should have done, I would have been able to at least have turned out three million five hundred thousand young fry. Notwithstanding the long distances that we were compelled to carry some of the fry we were quite successful. With one exception, our losses were merely nominal. After I completed the planting of the fry, I turned my attention to the interior of the hatchery, putting the hatching room in proper order for the next season's operations, painting and varnishing the troughs and trays, &c. The hatching room looks very well, and I anticipate a good hatch this winter.

Stripping the Salmon.

On October the 26th, I left Grand Falls for Carleton, St. John, for the purpose of stripping the salmon that were impounded in the Carleton pond. The same night that we arrived in St. John, Mr. Alexander Mowat, my colleague from the Restigouche hatchery arrived also. On the 28th, we commenced to strip the fish, having been detained one day on account of the spawning appliances having not arrived by the train ; on the 31st I despatched my son with 600,000 eggs for the hatchery. On November 1st he returned with the empty cases to take the balance of what ova I required to stock the house. On the 4th of November I left Carleton for home with 600,000 more eggs, making a total of 1,200,000 eggs for the St. John River hatchery. I left Mr. Mowat in charge of the remainder, to be taken to Bedford hatchery. We handled, in all, at the pond, 440 salmon, 333 females and 107 males. We finished stripping the fish in an unprecedented short time this season, which I believe to be in a great measure due to Mr. O'Brien's exertions, having everything in readiness for us to begin work immediately we arrived at the pond ; there is now a neat packing house, with sufficient space for storing all the necessary appliances used in the operation. The stairs that have been built for the purpose of ascending and decending to and from the spawning house are also a very great convenience for us and our assistants, and a protection from mishap when carrying the eggs from the pond to the packing house. The salmon were in first-class condition, healthy and strong.

It appears that salmon have been pretty plentiful in St. John harbour and in St. John River the past summer, and it is generally concluded by the anglers and fishermen that they are young fry that have been planted in our waters from this hatchery. We had several grisle amongst the large fish in the pond this fall.

I respectfully submit the foregoing brief report.

I am, sir, your obedient servant,

CHAS. McCLUSKEY, *Officer in Charge.*

4. MIRAMICHI HATCHERY, NEW BRUNSWICK.

SOUTH ESK, N.B., 25th Nov., 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I have the honour to present herewith, the annual report of operations in connection with the fish hatchery under my charge.

During the past year the work has been carried on with continued success—the different branches of the work having been satisfactorily conducted under the personal supervision of myself and the assistant officer. During the year the hatchery has been visited by a great many persons desirous of obtaining information on the work, and anxious to show their appreciation of the beneficial services being done the waters of our rivers by the department, in carrying on the work at this hatchery.

By reference to my last annual report, it will be seen that the number of ova obtained and placed in this hatchery in the autumn of 1897 was 2,020,000. Of this number, 603,000 were transferred to the St. John River hatchery, leaving a balance of 1,417,000. From these there was an approximate loss, from time of gathering until distribution, of 110,000, leaving 1,307,000. In addition to this number of native Miramichi fry, 250,000 ova were received from the Restigouche hatchery, just previous to hatching, to fill an application of the late Senator Adams—making a total of 1,557,000 fry to be distributed in the rivers directed by the department, as follows :—

Name of River.	Miramichi Fry.	Restigouche Fry.
North-west Miramichi River	450,000	200,000
Main South-west Mirimichi River	200,000	
Little " "	385,000	50,000
Sevogle River	175,000	
Renous River	75,000	
Stewart's Brook	22,000	
Totals	1,307,000	250,000

The fry were invariably planted in a sound, healthy condition, and on the same grounds as selected in former years, and in the sections of the rivers where observation showed to be the best adapted for the purpose of placing young fry.

I received instructions, late in 1897, to assist D. G. Smith, Esq., provincial commissioner of fisheries, to procure a limited supply of trout ova. As previously reported, we succeeded in placing 30,000 ova in this hatchery. These were successfully hatched, with very little loss. Mr. Smith performed the work of distributing these fry himself, and was very successful in his undertaking. He planted small lots on waters emptying into the St. John and Miramichi Rivers. This gentleman made quite an improvement in the way of carrying fish by rail, by inventing a can with an aerating device attached, which is a great benefit, where the fry are liable to delay for any length of time. Formerly, when the fry were detained at any of the stations, it was necessary to keep the cans in motion in order to keep the water aerated, but this is now performed by having a tube and small air pump attached. I was so much impressed with the improvement that I had several new ones manufactured, and found them very convenient during this year's distribution.

Repairs.

After the distribution of fry was completed, the hatchery was cleaned, and all appliances put in good working order. The supply pipes and tanks were overhauled and repaired where it was found necessary The hatching troughs and trays were also thoroughly varnished. Later on, a building 14 by 40 feet was erected to serve the purpose of a coal and store house, the old one having completely rotted away. The fences about the property and the road leading to the house were also repaired. The retaining dam and pond, which were damaged by the spring ice freshet, were put in condition to serve for this season, but it will be necessary to make further repairs upon the sluice and gateways of the dam before it can be used another season, as the woodwork is getting very much decayed, and will not stand the pressure of a large head of water. The amount required for this purpose will not exceed $75. In all other particulars the outfit of this hatchery is in good working order. The total expenditure for repairs this season amounted to about $165.

Capture of Parent Salmon.

When all necessary repairing had been completed, and arrangements made, the work of procuring this season's supply of parent salmon was commenced. The nets were operated on the same rivers and in the same manner as in former years, viz., one set net on the Little South-west Miramichi, and another on the North-west Miramichi. A seine was also operated in the pools on the latter river, and by this means the greater number of parent fish were taken. The water was very low all the season, and the fish did not enter the set nets at all. The net on the Little South-west, where good fishing was always heretofore obtained, having nearly proved a failure this season. However, a good supply of fish was obtained. The first were taken on September 14th, and from that date until the operations were concluded, on October 21st, the total number of 404 was netted.. Of this number, 367 were taken on the North-west Miramichi, and the remaining 37 were netted on the Little South-west Miramichi. The total number consisted of 265 females and 139 males. The cost of procuring this number of fish was about $500, including guarding and miscellaneous expenditure, showing the average cost of each fish to be less than $1.25. Before spawning set in, 20 of the females and 7 of the males were liberated, as they were beginning to show signs of a slight fungoid growth. It was considered better to liberate them as soon as any signs of the disease began to show, as they might extend the disorder to others in the inclosure. After the above-mentioned numbers were liberated, there remained a balance of 245 females and 132 males, from which to collect this year's supply of ova.

During the year, some of the fishermen and others who visited the hatchery, have expressed the opinion that although they are in accord with the manner in which the hatchery is operated, it would be an improvement in the right direction if we obtained the supply of parent fish from the summer runs of salmon, instead of procuring them from the August and September runs. This matter has been thoroughly discussed and reported upon at previous times, and there is very little to add to what has already been written. Many claim that there is no difference in the several runs of salmon that enter our rivers, while others again are strongly of the opinion that there is a decided difference. However, it is a plain fact that all salmon, no matter what time they may enter the rivers from the sea, are all alike, in general appearance at least, at spawning time.

In view of the opinions and arguments advanced by a considerable number of the fishermen and others who are anxious for a trial of the summer fishing to be made, probably it would be advisable for the department to take the matter into their consideration. It may be feasible to fit out and operate a stand of nets on one of the licensed fishing grounds near the hatchery, or at the head of the tide, for the purpose of obtaining parent salmon during the coming season. And then, if there was any deficiency in the number required to stock the hatchery, a further supply could be obtained in the same manner as this year. It would be better to operate only one set of nets for the first season, until we became thoroughly acquainted with the work of taking live salmon from the deep-water nets. The main object to be considered before the project can be properly and safely entered upon, would be the selection and fitting out of a suitable place for keeping the fish from time of capture until spawning time. It may be mentioned here that, in my opinion, many of the fish now obtained enter the rivers early in the summer and remain in the pools until they are taken by the seine operated for the purpose of procuring parent salmon, that is, if it is a season with no summer freshet to allow the fish to get away beyond our reach. But it is cited by some of the fishermen that the August, September and October runs of salmon are getting more plentiful every year, while the June and July runs have not increased any in late seasons, and perhaps these opinions are worthy of consideration. The fish bred from the Restigouche ova, which are of a larger variety than our native salmon, are showing a marked increase in these rivers.

Collection of Ova.

The fish inclosed in the pond, when spawning time commenced were found to be in a splendid condition. The first fish were stripped on October 22nd, and the work was completed on November 8th. The total number of ova obtained was 1,730,000, showing the average to each fish to be slightly over 7,000. If there are any of the other hatcheries not fully stocked, there can be three or four hundred thousand transferred from this hatchery, and the remainder will be a sufficient supply to carry at time of hatching, as very probably the number will be augmented by the usual transfer from Restigouche.

In accordance with instructions received from the department, I assisted the provincial commissioner of fisheries to procure a small supply of trout ova again this season. The Commissioner obtained the parent trout in the Bartiboque River. He procured 22 females and 15 males. From these we gathered 28,000 ova. These, as well as the large stock of salmon ova now in the hatchery are in splendid condition, and there is every reason to believe that this season's work will also be successfully carried out.

Submitting all for your consideration.

I am, sir, your obedient servant,

ISAAC SHEASGREEN.
Officer in Charge.

5. RESTIGOUCHE HATCHERY, QUEBEC.

RESTIGOUCHE HATCHERY, 1st Dec., 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I beg leave to submit herewith my annual report upon the operations, as conducted at the Restigouche hatchery, during the past year.

The eggs collected and deposited in the hatchery in the autumn of 1897 produced most gratifying results, fully 95 per cent were hatched, and the young fry were distributed in a perfect, healthy condition, in the following waters, viz. :—

Kedgwick River, 60 miles above hatchery	300,000
Main River, between hatchery and Kedgwick	345,000
Upsalquitch River	190,000
Metapedia River	300,000
Semi-eyed eggs, shipped in May, to Miramichi hatchery	250,000
A total of	1,385,000

Large numbers of the fry were conveyed fifty and sixty miles up the river, in the floating crates, and liberated in perfect condition.

Operations at the Government pond were begun early in May, as usual, and the pond reconstructed and the nets arranged in fishing order, with all speed, and as soon as the freshet would permit. The first run of fish entered the river very early, while in flood, and escaped both netters and anglers. The two Government nets succeeded, however, in capturing 321 of the largest and finest fish I have yet seen. These fish did very well in the pond ; a few were lost from the fungi, and all Grilse and any injured adult fish were liberated. When the season came around for rounding up the fish, and separating the males from the females, and collecting the eggs, there were found to be 344 fish in the pond, 205 females and 139 males. Stripping began on the 19th October, and 2,500,000 eggs were collected and deposited in perfect condition in the hatchery, and the embryo is now quite large. The number of fish taken from the pond in the fall, exceeded the count kept by our own men, and that of the Club's sworn guardian, by 23 fish : occasionally, 25 or 30 fish are taken at one tide, and it is quite difficult to get an accurate account, as the fish pass out of the pontoon into the retaining pond. There will be entirely too many fry when hatched, for the capacity of the hatchery, and I would recommend the removal of at least 500,000 semi-hatched eggs in the spring to some of the other institutions which may require a supply.

Repairs to Hatchery.

The banking was removed from the building in early spring, and the whole foundation reblocked and filled under the sills with stone, also, the troughs and tanks were repaired and varnished, and all the plant made ready for the reception of the eggs this autumn. The hatchery is in good working condition and, with a few slight repairs each year, will now last for a long time. Very little new plant will be required for operations at Tide Head pond next season.

General Remarks.

I am pleased to have the opportunity of attaching the inclosed letters to this report, from guardians and others, who are thoroughly acquainted with all matters on the river, and speak from what they have actually seen and know. For my own part, I have heard nothing but words of encouragement and praise, for both the state of the river and the hatchery. There were no complaints from the anglers, fish were extra large and very plentiful, and the rivers were well guarded. The anglers are a great blessing to the country, and spend a large amount of money. The rivers are becoming more valuable each year, and so long as a couple of millions of healthy fry can be turned into them annually, there will be no great danger of overfishing. The netters in estuary and bay had grave fears that so many anglers would destroy the river, but the hatchery, combined with the thorough protection, has been more than compensated for by the large numbers of fish taken with the fly. In obedience to official instruction, I proceeded to the Carleton Pond, St. John, and began operations there, on the 26th October, the fish were in perfect condition, yielding upwards of 2,000,000 of eggs, which were distributed between Bedford and Rapide des Femmes hatcheries. The Carleton pond is certainly the finest place in the world for the impounding and retaining of the parent salmon. The numbers of parent fish could easily be increased and sufficient eggs obtained to supply several hatcheries. It is certainly the best system to pursue, and the one which will undoubtedly produce the best results.

Hoping the above report, together with the remarks I have felt called upon to make will meet with your approval,

I beg to remain, sir, your obedient servant,

ALEX. MOWAT, *Fishery Officer.*

Mr. Robert D. Gerard writes as follows :—

"I have been employed this year as usual, guarding the river. A great many salmon having passed up before the nets were set, the water was then so high, and there was so much debris running that fishermen could not get their nets out. As the salmon usually run altogether at night, I could very often see the water disturbed on the shallow places by large bodies of fish passing up. The law was well observed. I consider the fish are increasing in numbers all the while. I saw schools of the young smolt late in October passing out to sea, something I have never noticed before, so late in the season. I cannot help thinking but what this is due to the hatchery, which has been the life of our salmon fishing."

Mr. Daniel Lawlor says :

"I have lived on the Metapedia all my life, and have been guardian on the lower end for the past number of years, and I never saw the salmon more plentiful than they were this year. The young parr were as thick as smelts, and I saw thousands upon thousands of the young fry along the river, which I am sure were the fry you planted from the hatchery. I think there ought to be a hatchery established on the Metapedia."

Mr. Steven Ferguson writes :

"I have been quardian on the Petapedia River for the past four years, myself and another man guard the first thirty miles of it. Occasionally, we would go to the lakes. The river was well filled with salmon this year. I saw hundreds on the shallows spawning this fall. There were a great many salmon in the Restigouche this season. The anglers have had good success, and were well pleased. The fish are increasing and rivers becoming more valuable ; people are only beginning to realize that the hatchery has been doing a great work."

Mr. Alex. J. Adams also reports :

"I have lived on the Restigouche above Metapedia for thirty years, beside one of the best salmon pools, and am particularly interested in the fisheries, and move up and down the river a great deal, which gives me a thorough knowledge of what I state. Now, in the year 1896 I never, in all my life, saw the salmon so plentiful. One hundred anglers on the river each averaging six and seven salmon per day. Ten years ago, they would not catch that many in a month ; 1897 was not so good, but go back a few years, and we would consider it a great year. This year, 1898, was almost as good as 1896, and I think there were more spawning salmon this fall in the pools than there were in 1896. My sons carry the mail daily for the Restigouche Salmon Club, and one would be amazed to see the canoe loads of salmon that come down the river from the anglers every five days. The value of fishing water on the Restigouche has increased 500 per cent in a few years ; there are far more nets and more anglers than there used to be ; consequently, more salmon caught, so we must ascribe it to the hatchery. If settlers on the river had known some fifteen or twenty years ago what our river is at the present time it would be thousands of dollars in their pockets to-day.

6. TADOUSSAC HATCHERY, QUEBEC.

TADOUSSAC, 18th November, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I have the honour to submit my annual report upon the operations of the Tadoussac hatchery for the year 1898. As stated in my last annual report, there were 2,413,000 salmon eggs placed in the hatchery in the fall of 1897. Of that number, 2,200,000 salmon fry have been distributed in the following rivers and lakes :—

Roberval Hatchery, H. J. Beemer, Esq	100,000
Jacques Cartier River, J. M. McIntyre, Esq	100,000
Murray River, Chas. Angers, Esq., M.P	50,000
River à Mars, Ha ; Ha ! Bay	200,000
St. John River, County Saguenay	200,000
Little Saguenay River, County Saguenay	100,000
Ste. Marguerite River, County Saguenay	500,000
Baude River, County Saguenay	300,000
Chisholm River, County Saguenay	200,000
Mowat's Lakes, County Saguenay	400,000
Hatchery Lake, County Saguenay	50,000
	2,200,000

The distribution in the Upper Saguenay was made with the assistance of the steam-yacht "Forrest," and the fry were planted in the different rivers in a very healthy condition. The first lot of 100,000 salmon fry were delivered at the Roberval hatchery to be planted later on in the rivers of the Lake St. John. The Roberval hatchery is principally carried out for the breeding of speckled trout and Winnonish ; this hatchery is the property of H. J. Beemer, Esq.

The capture of the parent salmon was carried out as usual by means of two departmental nets. There were at the salmon pond, at the spawning time, 235 females and 160 males. The females gave 2,367,000 eggs, now on the trays and looking well. In the last days of the spawning time, Mr. Richard E. Follett, the manager of the Roberval hatchery, came down to Tadoussac with a few male Winnonish, transported alive in a large tin tank. The eggs of three female salmon were impregnated with the milt of the male Winnonish. At the request of Mr. Follett, for H. J. Beemer, Esq., I am taking charge of those eggs until next spring, when they will be transported to Roberval. Just now, those eggs are looking as well as the pure salmon eggs. The spawning time commenced on the 20th October, was over by the 12th November, and all the parent salmon were liberated from their confinement of five months and a half. There was not a single loss of fish during that period, the greatest care is always taken to place in the pond only fine healthy salmon. I am happy to mention that the salmon fry planted in the Mowat's Lake are doing well ; large numbers could be taken, measuring from 18 to 24 inches, fine looking fish. As the fact is well known, all over, that those lakes are well stocked with young salmon, it will be necessary in future to keep a guardian from May to November until the ice will be well formed on the lakes. I would recommend, as a necessity, to have those lakes well stocked with smelt as a food for the young salmon, smelt being recognized as the best kind of food for salmon. I would not be surprised if those lakes were well stocked with smelt, to see our young salmon gowing to large size before going to sea. It would be easy in the fall to procure a large quantity of smelt to be transported into those lakes in our large cans used for the distribution of salmon fry. They will spawn in those lakes, and in a few years the young salmon will find a splendid food on them. During the summer we had the visit of the Hon. Minister of Public Works. The honourable gentleman seems to take a great interest in the breeding of salmon. A good result of his kind visit was an order given to one of his engineers, Mr. Blais, to have the old hatchery pulled down and replaced by a fine platform over the salmon pond. As reported before, the damages to the floor of the hatchery by the breaking of a good part of the cross beams in the cellar, caused by the weight of the water in the tanks and troughs, has only been temporarily repaired for the winter.

Last spring twenty-five old cans were repaired, but twenty-five more large sized cans will be required for next spring, to have the distribution of fry made in the shortest time possible by water and by land at the same time, on account of the water of the hatchery lake getting sometimes so warm at the end of June.

I have the honour to be, sir, your obedient servant,

L. N. CATELLIER.

7. MAGOG HATCHERY, QUEBEC.

MAGOG, QUE., 12th November, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—In accordance with the rules of the department, and in compliance with your instructions, I beg leave to submit herewith my annual report of the operations done and performed at the Dominion fish hatchery under my charge, for the year 1898.

On the 3rd March, 1898, 3,000,000 whitefish eggs were received from the hatchery at Sandwich, Ont., and on the same date 150,000 salmon-trout eggs were received from the Newcastle, Ont., hatchery.

The eggs from both these hatcheries were in excellent condition. The fry hatched out strong and healthy in the months of April and May; and planted between the 27th April and 1st June into the waters herein named.

Whitefish.

Lake Magog, Counties Brome and Stanstead	1,400,000
Lake Massawippi, County Stanstead	400,000
Orford Lake, Counties Brome and Sherbrooke	500,000
Lake Mégantic, County of Mégantic	200,000
Brome Lake, County of Brome	250,000
Key Pond, County of Sherbrooke	200,000
Total	2,950,000

Salmon-trout.

Spider Lake, County of Beauce	60,000
Lake Fortin, County of Beauce	20,000
Lake Memphremagog, Counties Brome and Stanstead	25,000
Massawippi Lake, County Stanstead	10,000
Lake Nick, County of Brome	10,000
Trouser Lake, County Brome	10,000
Orford Mountain Pond, County Brome	5,000
Seed Pond, County of Brome	10,000
Total	150,000

It is most gratifying to me, and will no doubt be pleasing to you to know that the above number of tender young fry were planted in the several waters herein designated without any appreciable loss. When we consider the long distance they had to be conveyed, you will very easily conceive the amount of care and attention it requires to be in a position to report such gratifying results of the year's operations.

The interior of the hatchery has been painted and the ceiling whitened, repairs made to the bridges and drains, and the roof repaired where the wind took off some shingles, but as the roof is very old, it will require to be newly shingled in another year.

I found it necessary to make six new nursing troughs, and have also patched the leaky ones, so that with a coat of parafine varnish, they will be serviceable for a while longer.

I am, sir, your obedient servant,

ALEX. FINLAYSON, *Officer in Charge.*

8. NEWCASTLE HATCHERY, ONTARIO.

NEWCASTLE HATCHERY, 5th December 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

I have the honour herewith to submit a report of the fish cultural operations carried on at this hatchery during the past year.

The following schedule will show the points of distribution, also the numbers and kinds of fry placed in each locality last spring :—

Whitefish.

Lake Ontario—Cobourg	300,000
Lake Ontario—Toronto	300,000
Lake Ontario—Hamilton	300,000
Lake Ontario—Newcastle	300,000
Lake Ontario—Bowmanville	100,000
Bay of Quinté—Picton	300,000
Bay of Quinté—Belleville	300,000
Georgian Bay—Collingwood	300,000
Georgian Bay—Meaford	300,000
Lake Huron—Southampton	300,000
Total distribution of whitefish	2,800,000

Salmon-trout.

Lakes, North Hastings County	75,000
Lake Ontario—Newcastle	225,000
Lakes, Haliburton County	50,000
Lake Ontario—Toronto	200,000
Lake Ontario—Cobourg	75,000
Lake Ontario—Bowmanville	100,000
Lake Ontario—Hamilton	100,000
Lake Ontario—Kingston	100,000
Georgian Bay—Collingwood	100,000
Manitoulin Island, Little Current	150,000
Bay of Quinté, Belleville	100,000
Colpoy's Bay, Wiarton	200,000
Gillis Lake, Lanark County	50,000
Total	1,525,000

Eggs shipped to Ottawa	1,100,000
Eyed Eggs shipped to Grand Falls, N.B	500,000
Eyed Eggs shipped to Magog, P.Q	150,000
	1,750,000
	1,525,000
Total distribution from Newcastle	3,275,000

I beg to inform you that the fry were all deposited in the different waters in the very best condition.

In September I was instructed by your department to proceed to Wiarton for the purpose of securing the usual supply of spawn. Consequently, I left Newcastle the 3rd of October, with two assistants. The month of October was the roughest month that has been known on the lakes for a number of years, and we had great difficulty in getting our nets set, and did not get our last net in until the 1st of November. The greater part of November was unusually rough, which raised the nets at intervals and occasioned us extra help and great difficulties. However, we managed before the 1st December to secure a full supply of eggs, about 4,750,000, 1,250,000 being delivered to Mr. John Walker, of the Ottawa hatchery, leaving the balance here of 3,500,000, which are now laid down in the troughs and are apparently in first-class condition.

We must congratulate ourselves, as I understand the Michigan hatcheries failed in getting a full supply, who depend on the fishermen of Lake Superior to secure supplies, who use a gill-net for the purpose, and owing to the rough weather a great number of the fishermen lost their nets this season.

Our plant now in Wiarton is in good condition, and with the expenditure of $40 or $50 to repair our pile driver and spawning boat, will put everything there in good condition for next year's operations. I have placed our two nets and lines and stored them in a locality where there is scarcely a chance for them to be destroyed by fire or flood, as the building they are stored in is almost isolated.

Our hatchery is in first-class condition, and with a few items of expenditure, such as painting troughs, floors, &c., which can be done during the coming summer, after the fry are distributed.

I have the honour to be, sir, your obedient servant,

WM. ARMSTRONG, *Officer in Charge.*

9. SANDWICH HATCHERY, ONTARIO.

SANDWICH, 12th December, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I have the honour to submit my annual report upon the operations at the Sandwich hatchery during the past year.

As stated in last year's report, this hatchery contained 95,000,000 whitefish eggs, from which were turned out 85,000,000 young fry and semi-hatched eggs, which were disposed of as follows :—

Eyed Eggs.

Ottawa, Ont.	2,000,000
Newcastle, Ont.	3,000,000
Magog, Que.	3,000,000
Bedford, N.S.	3,000,000
St. John, N.B.	3,000,000
Total	14,000,000

Young Fry.

Point Edward, Lake Huron	3,000,000
Mitchell's Bay, Lake St. Clair	3,000,000
Peach Island, Lake St. Clair	3,000,000
Belle Isle, Detroit River	3,000,000
Fighting Island, Detroit River	5,000,000
In Bay, below Fighting Island	4,000,000
Stoney Island, Detroit River	4,000,000
Bois Blanc Island, Detroit River	6,000,000
In Lake, below Bois Blanc Island	4,000,000
Pigeon Bay, Lake Erie	3,000,000
Bar Point, Lake Erie	3,000,000
Colchester, Lake Erie	3,000,000
Kingsville, Lake Erie	1,000,000
Leamington, Lake Erie	1,000,000
Rondeau, Lake Erie	1,000,000
Port Stanley, Lake Erie	1,000,000
Hamilton, Lake Ontario	1,000,000
Niagara, Lake Ontario	1,000,000
Toronto, Lake Ontario	1,000,000
In river at hatchery	20,000,000
Total	71,000,000

All the above fry were placed in the water at the above-named points in an excellent and healthy condition.

This fall we have in the hatchery, 100,000,000 whitefish eggs, which are in a fine condition.

The total catch of fish this autumn was accounted for as follows :—

Liberated	14,000
Sold	4,000
Salted	200
Lost	200
Used	60
Hotel Dieu (Hospital)	40
Total	18,500

I herewith submit a few of the many letters handed and sent to me by experienced fishermen, extolling the good work the hatchery is accomplishing in this part of the Dominion. The letters speak for themselves.

Mr. Jas. Antaya, of Ojibbewas, says :

"As a fisherman of fifteen years' experience on the Detroit River, I take pleasure in saying that never before during the whole time have I seen the whitefish so plentiful as they have been this season in this river. The great increase, to the best of my belief, is the product of the hatchery."

Mr. Donus Reaume, of the same place, says :

"The great increase in the catch of whitefish on the Detroit River this season stands as a proof of the benefit which can be derived from the hatchery. The whitefish is the only fish which is hatched by the hatcheries, and is the only fish that can be seen in quantity in the Detroit River."

Mr. Hilaire Gignac, of Petite Côté, writes :

"As an old fisherman, who, for the last twenty-five years has been engaged in fishing in the Detroit River, I am pleased to say that, thanks to the fish hatchery, the whitefish catch is increasing every year, and this season the whitefish have been larger and more plentiful than in any other season previous in my twenty-five years experience. It is an undeniable fact that we owe this increase to the hatchery, the increase being larger and larger every year, according to the larger quantity of spawn taken. While the herring and perch, whose spawn is not taken, show a very large decrease every year. I cannot help approving of our fish hatchery as a great benefit, and I feel confident that in a few years the whitefish will be as abundant in our Detroit River as in the years of long ago, if we can rely upon the stories told by the old fishermen of then."

Mr. Remi Laframboise, of River Canard, writes :

"As I have had a varied experience about our fisheries on the Detroit River and Lake St. Clair, and adjacent waters, for about twenty-five years, I would like to certify to the wonderful increase of whitefish in these waters during the past few years. This increase was more generally noticeable this year than any previous year, and I give your hatchery the full credit for this most phenomenal increase. There are many people around here who have been prejudiced against fish hatcheries, and declare they are not accomplishing the good that is claimed for them, but I am firmly convinced myself, and I am sure the most skeptical and hardest opponents of the system of fish propagation by the maintenance of fish hatcheries will agree with me in saying that the results and observations of this season's fishing prove beyond a doubt that fish hatcheries are accomplishing a wonderful work in replenishing our waters with a plentiful supply of whitefish.

"I met a man fishing on Lake St. Clair, who told me that the lake was full of whitefish, but there was scarcely any other variety to be seen. There is hardly any more sturgeon or herring left, and all kinds of wild fish are also scarce, which is another proof that the hatcheries are doing all that is claimed for them.

"About twelve years ago, I was fishing for C. W. Gauthier, and we caught as high as 20,000 herring at one haul, but now we cannot catch twenty in a season. The catch of whitefish this year has been better than it has been for the last twenty years or more, and I am confident that our hatchery has been the cause of this wonderful increase."

Mr. Richard Gignac, of Sandwich, writes as follows :—

"We often hear the question asked in this locality, 'Has the Government fish hatchery at Sandwich been beneficial to the propagation of whitefish in the Detroit River and Lake Erie ?" In answer to the above, I am free to admit that any one who has made observations on the subject will agree with me, that the institution has been immensely beneficial. Of course, it took some time before these results became manifested and, in fact, as long as ten years after the establishment of the hatchery, no increase was perceptible in the quantity of fish in our waters. Hence, it was that people began to doubt the advisability of keeping up such an institution. It must be borne in mind that the whitefish is a long-lived creature and that the length of time it takes to come to maturity is proportionate to the time it lives. The case is the same with any animal. "But," we are often asked, "how is it that the young whitefish never find their way back into the Detroit River ?" For the simple reason that they have no business there. When the whitefish ascends our streams in the fall of the year, it does so in obedience to the law of nature, which bids it go and deposit its eggs in a running stream. The spawn of whitefish falling in stagnant waters is lost. It must be stirred about by the current. But otherwise than for the purpose of spawning, no whitefish ever comes into a stream. Hence it is that the young fry, prior to the time that it has reached maturity, is never seen in the river. They remain in the deep waters of the lakes, and when they have reached maturity they return to their natural breeding grounds, the Detroit River, but not before about the time that the hatchery began operations. Our waters were about depleted of whitefish, so that what had once been a flourishing industry had to be abandoned as unprofitable. Where once as many as 500 whitefish were caught in one haul, scarcely ever more than ten or twelve fish can now be caught at a haul. This state of things continued on until about ten years ago, when the catch of fish began to increase slowly but gradually.

"I chanced to visit one of the Government fishing stations the other day on Fighting Island. It was about the middle of the whitefish season. I was greatly surprised on seeing the men haul in forty-five whitefish of fine quality in one haul. I was informed by the foreman, Mr. J. Pare, that they had 5,000 fish in their cribs, from which they were extracting spawn for the hatchery. On the very same grounds ten or twelve years ago, they could barely catch five hundred in the whole season. Now, taking into consideration the fact that the Detroit River is kept in a state of continual turmoil and commotion day and night by the huge steamers which plough up its waters almost down to its very bed. The water of the river is polluted by the filth and sewerage of Windsor, Detroit and Walkerville, and the mouth of the river is all but closed up by the wings of pound-nets, both on the Canadian and American side. I think I am right in saying that the quantity of whitefish is rapidly increasing, and this increase can be traced to no other source than to the young fry which the hatchery every year deposits in the waters of Lake Erie. Our fishing industry was destroyed, not because of the large quantity of fish taken yearly from the lakes and rivers. but by the amount of spawn which was allowed to go to waste, instead of being deposited where it would have hatched and supplied the deficiency made by the fishermen. Hence, I say, take care of the spawn, see that it is deposited where it may hatch by the process of artificial or otherwise, and I am confident that our fishing industry will gradually be restored to its former standing. That this is the object aimed at and that it is gradually being realized by the Sandwich hatchery is the firm conviction of."

Mr. J. D. Meloche, also of Sandwich, writes :

"I think it to be my duty, as an old fisherman of over thirty years' experience in fishing from Lake Erie to Lake Huron for all kinds of fresh-water fish, and I can positively say in regard to this fall's fishing that I have never seen any such fishing of whitefish for at least twenty-five years."

"Pickerel, herring, perch and other fish are almost extinct in this district, but whitefish are plentiful, and the only thing I can attribute this good fishing to is the artificial breeding. I think it would be a great good to the country if pickerel and sturgeon could be treated in the same way as the whitefish, as they are valuable fish. But I hope that the Fishery Department would allow you to experiment on those fish and have the Detroit and St. Clair Rivers overstocked again, as formerly."

It will be observed by the foregoing letters that the hatcheries are getting all the praise for the increase of whitefish in our waters. Now, while I agree in every particular in what has been said in these letters, I maintain that a large share of credit is due to the Dominion Government in enacting laws in respect to the close season, and by assisting in many other ways this laudable work.

In view of the fact that sturgeon has now got to be of such a commercial fish, I think it would be an extremely wise policy for the Government to start and propagate them.

On Thursday, November 24th, I had the pleasure of a visit from L. F. Ayson, Esq., Fishery Commissioner for the Government of New Zealand, accompanied by Mr. A. McNee, editor of the Windsor *Record*, and Mr. F. H. Cunningham, of the Department of Fisheries, and after showing them through the hatchery, took them down the river on the steam yacht "Ranger." We visited Government fisheries at Fighting Island, and I showed them how they were conducted and further explained to them, in a practical way, the process of whitefish propagation in its various stages.

The gentlemen expressed themselves as highly pleased with the reception accorded them. Mr. McNee aftrwards caused to be printed in the *Record* a very extended account of the visit and the magnificent work being done by the Government hatchery here.

We started to fish on the 25th of October and we ceased fishing November 23rd. The catch of fish was good when we started, and was equally as good when we quit fishing. I am also informed that whitefish were being caught in large quantities in Lake St. Clair before we started to fish.

Last summer we reshingled the roof of the hatchery and painted the building, both inside and out, and repaired the machinery. The building is now in a first-class condition.

I remain, sir, your obedient servant,

WM. PARKER, *Officer in Charge.*

10. OTTAWA HATCHERY, ONTARIO.

OTTAWA HATCHERY, 11th November, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I have the honour to submit my annual report of the operations carried on in the Ottawa hatchery during the season of 1898.

On January 4th, 1898, I received from the Newcastle, Ont., hatchery, 1,100,000 salmon-trout eggs, which were deposited in the hatching toughs, and also in February I received 2,000,000 whitefish eggs from the hatchery at Sandwich, Ontario. The eggs from both of these hatcheries were received in excellent condition.

The fry hatched out strong and healthy during the months of April and May.

The work of distributing the fry was entrusted to Mr. Andrew Halkett and Mr. Sutherland, both officials of the Fisheries Department. These officials, having had several years' experience in the distribution of the fry, I am pleased to state that the work was done most successfully, and I beg to ask that this work be again entrusted to these officials next spring.

The fry was deposited in the following named waters:—

Salmon-trout.

Charleston Lake	100,000
Sharbot Lake	100,000
Rock Lake	100,000
Labelle, Que.	100,000
Lake No. 7, Joliette, Que	80,000
Meache's Lake	70,000
Clear Lake, Sebastapol Township, Ont	60,000
Colton's Lake	60,000
Otter Lake, Leeds County, Ont	50,000
Patterson's Lake, St. Maurice, Que	50,000
Eagle Lake, Frontenac County, Ont	40,000
Moulinette Lake, Cornwall, Ont	40,000
Mink Lake, Eganville, Ont	40,000
Basswood Lake, Algoma	40,000
Missisquoi Bay	40,000
Muskrat Lake, Renfrew County, Ont	40,000
Green Lake, Renfrew County, Ont	30,000
Total	1,040,000

Whitefish.

Meache's Lake	360,000
Sharbot Lake	300,000
Eagle Lake, Frontenac County, Ont	180,000
Basswood Lake, Algoma	180,000
Muskrat Lake, Renfrew County, Ont	180,000
Missisquoi Bay	180,000
Otter Lake, Leeds County, Ont	150,000
Bass Lake, Leeds County, Ont	150,000
Patterson's Lake, St. Maurice, Que	90,000
Green Lake, Renfrew, Ont	90,000
Moulinette Lake, Cornwall, Ont	120,000
Total	1,980,000

The hatchery is in good order and repair for the coming season's work. I have also added ten new cans for carrying the fry to the stock already on hand. This will greatly facilitate the work of distributing next spring.

The Canadian Fisheries Exhibit and hatchery still continue to prove a great source of interest to large numbers of visiters. The number of visitors who registered for the year being over 24,000, an increase of 2,000 over that of the previous year.

I am, sir, your obedient servant,

JOHN WALKER,

In charge of Ottawa Hatchery.

11. SELKIRK HATCHERY, MANITOBA.

SELKIRK, 22nd December, 1898.

To PROF. E. E. PRINCE.
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I beg to submit herewith the annual report of the operations at the hatchery at this place for the year 1898.

In making this report I am, of necessity, dependent on such information as has been obtainable, as I became responsible for the work of the hatchery only on my appointment as officer in charge upon the first of October last.

Mr. Charles E. Page, who had the care of the ova under the late officer in charge of the hatchery, and who occupies the same position now, informs me that in the fall of 1897 about thirty millions of whitefish eggs were obtained and placed in the jars. These were put through the hatching process with the result that about nine millions of fry were successfully hatched out. The previous season the hatchery was not operated, and in 1896 only about four and a half million eggs were obtained, and these were shipped to British Columbia. In 1895 the officer at the time reported that twenty-five millions of eggs had been placed in the incubators, and he stated that not over nineteen millions of fry resulted. The nine millions of fry resulting from last season's hatchery operations were allowed to run down the off-take pipe of the hatchery into the Red River, and when the number of angles in this outlet is considered, and the rapidity of the flow of water which passes down, it is clear that quite a number of the delicate fry must have sustained more or less injury, and the water into which they passed could not be suitable as it is far too shallow to be favourable for successful planting. My instructions sent from Ottawa after my appointment were, of course, very late, and no preparations had been made at the hatchery up to that time. The season was unusually early and the weather the roughest and most unfavourable experienced in this district for many years, and it would not have been surprising had I failed, as many experienced parties predicted I should, in getting an ample supply of eggs. I succeeded, however, in securing as large a quantity of eggs as has gone into this hatchery in any former year, but not without suffering many privations, and after exerting most strenuous and determined efforts.

I made arrangements with Messrs. Coffey and Norton to procure parent fish with pound-nets in Lake Winnepegosis, on the condition that the coarse fish taken were to be retained by them as pay. It proved a most unprofitable venture for them, and they lost considerably by it. It was the only arrangement that appeared to me possible to make in view of the late date when instructions reached me to obtain ova by means of pound-nets. I found that the net owned by the department was not in fit condition for use, as portions of it were quite rotten, and the firm mentioned being the only one I could find with that sort of net not in use, and Lake Winnipegosis the only lake in the province in which the men had any experience in pound-net fishing, or in which parties engaged in the fishing industry were willing to undertake the venture.

By the 15th October I had boats, nets, &c., &c., all ready for a start, but owing to the heavy snowfalls, hard frosts, and gales of wind, operations were carried on with great difficulty. We got about thirty millions of eggs, all taken between the 20th October and 1st of November, but owing to our tug getting stuck on the sand bar at the mouth of the Mossy River, and losing one of our flanges, we missed the train at Winnipegosis on the morning of the 1st November, and had to lie over until the following Saturday morning, the 5th (only two trains per week), when I got to Portage la Prairie, thence to Winnipeg, arriving late on Saturday night, and as there was no train to Selkirk until the following Monday evening, it was late on the night of the 7th before we got the eggs placed in the jars at the hatchery. The men had everything in perfect readiness to receive the eggs, but the water was very bad, on account of the recent storms. It was so muddy that the eggs were scarcely discernible in the jars, and this continued for some days, when it finally cleared up and has remained in good condition ever since.

By closely watching the heat, both from the boiler and the stove, we have economized fuel, and been able to maintain the temperature of the water at 36° and under, consequently have had less than the customary trouble with fungus, and if no mishap overtakes us between now and the end of the hatching season, we naturally anticipate good results, though I fancy when the river breaks up, and we are compelled, on account of dirt to get our supply of water from the well, which will be from eight to ten degrees higher temperature, that we may expect a lot of premature fry. This difficulty, which has to be contended with every year, might be overcome by the building of another tank at a greater altitude than the present one, and the water filtered from one to the other, thus enabling the operator to maintain the same temperature throughout the whole period of incubation, and the fry would be much stronger, and more healthy than with the present arrangement.

I may add that the walls of the hatchery are held together by cross-beams, about twenty feet apart, which are in three pieces, joined on corbels, resting on two tiers of posts in the inside of the building, but are not bolted, or in any way fastened, either to the corbels or posts, consequently there is very little to prevent the weight of the roof, in a heavy wind, from forcing the walls out and the whole structure falling to the ground. Already the west wall is quite out of plumb, having a very decided lean outwards towards the bank. By putting iron rods across the building alongside each of the cross-beams, the danger could be averted.

The tank has been a source of annoyance this year, on account of leaks, and I am told has been so ever since it was built. It is built square, and is made of two-inch plank and jointed by a house carpenter, so that it is impossible to caulk it so it will not leak, consequently it has leaked, and will continue to leak so long as it is in use. The continuous settling of the foundation of the building causes the joists of the tank to keep opening at various places.

In connection with the hatchery there should be a steam tug for the purpose of taking ova in the fall, and I would suggest the department owning or controlling a small light-draught boat fitted up so the men could live on board. The boats owned by the fishing companies are all too large, draw too much water, and cost too much to operate. This fall the men, as well as myself, suffered considerably from extreme weather and lack of eating and sleeping accommodation. A boat suitable for this purpose would not cost much and could be operated cheaply, as wood on the lake does not cost over $1 to $1.50 per cord, according to quality. A boat or tug of this sort could be used to good advantage in the fishery service, during he summer months, and if this service is to be made efficient, and independent of favours from the fish companies, something of the kind is indispensable.

There are numerous applications for fry from various parts of the province and the North-west Territories, and the stocking of these western waters is a matter of importance.

I have the honour to remain, sir, your obedient servant,

F. W. COLCLEUGH, *Officer in Charge.*

12. BAY VIEW LOBSTER HATCHERY.

BEDFORD, N.S., 25th November, 1898.

To PROF. E. E. PRINCE,
Dominion Commissioner of Fisheries,
Ottawa.

SIR,—I beg to submit my annual report upon the operation at the Bay View lobster hatchery for the season of 1898.

On the 4th of May I arrived at Bay View, and at once commenced fitting up the hatchery and making preparation for the season's work.

The first lot of eggs was received on the 12th, from the two factories near the hatchery, and during the season 25,000,000 were collected from them in small boats, and by the employees of the hatchery.

The steamer "Diamond" was employed twenty-six days collecting eggs and distributing fry. During that time she brought in 40,000,000 from the six factories around Pictou Island, having made daily trips there, and 20,000,000 from Canso in one trip, which occupied four days, having been delayed two days by a storm.

The first fry appeared in the jars on the 16th of June, and on the 25th, distribution commenced, and continued until the 5th July, as follows :—

June 25	10,000,000	by "Diamond."
June 27	20,000,000	by "Diamond."
June 28	10,000,000	by "Diamond."
June 29	10,000,000	by "Diamond."
June 30	10,000,000	by "Diamond."
July 2	20,000,000	by "Diamond."
July 5	5,000,000	by small boat.
Total	85,000,000	

The past season was not a favourable one, either for packer or fisherman. The weather was stormy, and many days traps could not be hauled.

On Pictou Island two or more factories were compelled to close down early in the season on account of sickness of both fishermen and factory hands, caused by a bad type of measels, which spread over the whole island.

There is generally but little fishing carried on after the 1st July, and it is conceded by most every one, that for the protection of the lobster, as well as for the interest of the packer and the fisherman, operations should close on that date.

I am of opinion that good results are now visible from the hatchery, and no doubt some testimony will be given before your lobster commission, which is now making inquiries into the lobster fishing, showing that the hatchery is doing much good and restoring to the sea many millions of young lobsters which otherwise would go into the boiling kettles.

I venture to include in this report a letter from Messrs. Hogg, Craig & Co., packers of Pictou Island, who are of the belief that the hatchery is doing a good work :

PICTOU, N.S., 5th October, 1898.

ALFRED OGDEN, Esq., Bedford, N.S.

DEAR SIR,—In reply to your inquiry of a recent date, we beg to say that our fishermen reported a large increase in the number of small lobsters on the fishing grounds.

This increase has been more marked each year for the past two or three years. The small lobsters are noticed in the traps even at times when fish suitable for canning are scarce. It is only reasonable to assume that this large increase in small lobsters is due to the success of the hatchery at Bay View.

We trust that the good work of artificial propagation of lobsters will continue and increase.

We might also say that the average size of the lobsters taken at our Pictou Island cannery this year was an improvement on the previous four years.

We are, yours respectfully,

HOGG, CRAIG & CO.

As previously reported, the ice of last winter considerably damaged the inner portion of the wharf, and I am afraid that the ice during the coming winter will still further damage it so as to prevent laying the suction pipe upon it; if so, a new pier will have to be constructed before operations can begin in the spring.

In all other respects the hatchery is in good working order.

I am, sir, your obedient servant,

ALFRED OGDEN.

APPENDIX No. 13.

REPORT OF THE FISHERIES PROTECTION SERVICE OF CANADA BY COMMANDER O. G. V. SPAIN.

OTTAWA, 31st December, 1898.

The Honourable Sir Louis Davies, K.C.M.G.,
Minister of Marine and Fisheries.

SIR,—I have the honour to report on the work performed by the Fisheries Protection Service of Canada under my command during the past season.

The vessels forming the fleet were :
"Acadia," Commander O. G. V. Spain.
"Curlew," Capt. J. H. Pratt.
"Constance," Capt. Geo. May.
"La Canadienne," Commander W. Wakeham.
"Petrel," Capt. E. Dunn.
"Dolphin," Capt. G. Pearson.
"Kingfisher," Capt. W. Kent.
"Osprey," Capt. C. T. Knowlton, and
"Quadra," on the Pacific coast, on several occasions, Capt. Walbran.

The patrols of these vessels were generally as follows :—

The "*Acadia*," general supervision of the fleet employed in cruising along the whole coast of the maritime provinces, from Cape Sable Island to Gaspé, in the province of Quebec, with two trips up the River St. Lawrence and the north shore in search of smugglers.

"*Curlew*."—The patrol of this vessel is in the Bay of Fundy properly, but she has been engaged principally in stopping illegal lobster fishing in Nova Scotia and Cape Breton. Capt. Pratt has given a great deal of attention to this.

"*Constance*."—This vessel has been used entirely in the revenue service, making trips to various parts of the provinces. She has been under the control of Mr. F. Jones, Chief Preventive Officer, who also had the fisheries cruiser "Stanley," and tug "Gladiator" at his disposal.

"*La Canadienne*."—This vessel works independently of the rest of the fleet. She is operated under the control of the officer in charge of the Gulf division of fisheries, and is mainly employed on the Quebec coast and the Canadian Labrador, looking after the interests of our fishermen. A report of this vessel's work will be found among the inspectors' reports.

"*Petrel*."—Employed on the great lakes, with headquarters at Port Stanley or Amherstburg ; principally, her work is patrolling the boundary line, although she does excellent work looking after our own fishermen also.

"Dolphin."—A small tug, extremely old and slow, and not particularly seaworthy, employed among our own fishermen in Georgian Bay.

"*Kingfisher*."—Patrolling Cape Breton and Prince Edward Island, with headquarters at Souris or North Sydney, employed largely in preventing illegal lobster fishing, which she has managed to do very successfully.

"*Osprey*."—Employed on the south-east coast of Nova Scotia and Cape Breton, with headquarters at Canso and Sydney, employed in preventing illegal fishing, a troublesome business, which has been carried out by the captain of the vessel to my satisfaction.

"*Quadra*."—Employed on the Pacific coast for fishery matters, on occasions.

A report of the particular work of each of these captains will be found herewith.

In addition to the above vessels, I had three tugs which were manned and officered from the fleet, and were used entirely in the suppression of illegal fishing, their names being as follows :—

"Davies," 1st Officer Milne, "Acadia."

"Active," 1st Officer Burns, "Curlew."

"Batt," Overseer Hobkirk, of Charlottetown.

The amount of gear, &c., destroyed by these boats was, I am sorry to say, very large indeed, but it is the only way to prevent illegal fishing, and I am certain that less of this kind of business was carried on last season than ever before. To give an idea of the sad consequences of illegal fishing to our fishermen, who will persist against all warnings, printed, verbal, and otherwise, in carrying on this, to themselves, ruinous work (ruinous in two ways, one on account of the lobster and the other the destruction of gear) the amount of gear destroyed by the "Davies" alone was 2,500 traps and back lines, four factories, 77 boats searched and three seized ; the other tug found it necessary to do about the same, or perhaps rather more. This kind of work is very sad and unpleasant to myself and my officers, but absolutely necessary.

The fleet patrolled nearly 90,000 miles of coast during the past season, and I may say, patrolled it well, but, pending the ratification of the treaty between Great Britain and the United States, various concessions have been made to United States fishing schooners. I have to report, however, that on many occasions these fishermen took advantage of the Government's generosity.

Canadian fishing schooners are supposed to fly from the main truck a red and white diagonal flag. I find a great deal of difficulty in persuading them to carry this out, however, and on many occasions a schooner will be reported fishing inshore, and on coming close to her she proves to be one of our own ; if the flag had been flying, this trip would have been unnecessary.

My thanks are due to the captains, officers and men of the service for the cordial support they have given me in all things. I have impressed upon the captains and boarding officers the absolute necessity of always acting with the greatest courtesy, more especially in any communication or business they may have with vessels belonging to a foreign power. These officers, the captains particularly, have a great deal of responsibility upon their shoulders, as the smallest indiscretion or thoughtlessness might lead to serious international complications. It will therefore be seen how very essential it is to have men with first-class education and certificates holding these highly responsible positions. I would again suggest that before any officer is appointed to the service he should appear before the Officer Commanding the service for examination as to his ability, &c., for this particular branch, as it can be readily understood that a man may be a first-rate sailor, but totally unfitted for the very delicate duties he may, on occasions, be called upon to perform whilst on duty in the Fisheries Protection Service.

LICENSES FOR FOREIGN FISHING VESSELS.

The same Order in Council being passed as before, sanctioning the continuance of the issue of *modus vivendi* licenses to United States fishermen, similar permits were issued in 1898.

The form of license is as follows :—

License to United States Fishing Vessels.

(Name) *Master or Owner* of the *United States Fishing Vessel* tons register, of , having paid to the undersigned, Collector of Customs at the port of , the sum of $, being one dollar and fifty cents per registered ton, the privilege is hereby granted to said fishing vessel to enter the bays and harbours of the Atlantic coasts of Canada, for the purchase of bait, ice, seines, lines, and all other supplies and outfits, and the transhipment of catch, and shipping of crews.

This license shall continue in force for the year 1896, and is issued in pursuance of the Act of the Parliament of Canada of 1892, entitled, "An Act respecting Fishing Vessels of the United States," 55-56 Victoria, chapter 3.

This license, while conferring the above-mentioned privileges, does not dispense with a due observance by the holder, or any other person, of the laws of Canada, and will become null and void, and forfeited forthwith, and the vessel will become ineligible to obtain a license in future, if any goods or supplies, or other advantages obtained hereunder, are sold or transferred to any United States fishing vessel that has not obtained a license.

Dated this day of A.D., 189

Collector of Customs at the Port of

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For Minister of Marine and Fisheries.

SCHEDULE of United States Fishing Vessels to which Licenses were issued under the Act entitled "An Act respecting Fishing Vessels of the United States of America" during the Year 1898—*Continued.*

Name of Vessel.	Port of Registry.	Tonnage.	Port of Issue.	Fee.	
				$	cts.
Gladstone	Gloucester, Mass	75	Canso, N.S	112	50
Elector	"	84	Tusket, N.S	126	00
W. H. Moody	"	48	Yarmouth, N.S	72	00
Blue Jacket	"	86	"	129	00
Hattie L. Trask	"	71	Shelburne, N.S.	106	50
Emma E. Witherell	"	81	Tusket, N.S	121	50
Alice R. Lawson	"	85	Pubnico, N.S.	127	50
Madonna	"	79	Yarmouth, N.S	118	50
Parthia	"	77	"	115	50
Mabel D. Hines	Beverly, Mass	92	Tusket, N.S	138	00
W. E. Morrissey	Gloucester, Mass	93	"	139	50
Meteor	"	96	Pubnico, N.S	144	00
Mystery	"	89	"	133	50
Thetis	"	67	Tusket, N.S	100	50
Margaret	Beverly, Mass	107	"	160	50
Shenandoah	Gloucester, Mass	77	Pubnico, N.S	115	50
Senator Saulsbury	"	77	"	115	50
Virginia	"	82	Lockeport, N.S	123	00
Landseer	"	71	Pubnico, N.S.	106	50
Joseph Rowe	"	98	"	147	00
Helen F. Whittier	"	92	Yarmouth, N.S.	138	00
Columbia	"	89	Barrington, N.S	133	50
Stranger	"	59	Shelburne, N.S.	88	50
Essex	"	84	Pubnico, N.S	126	00
Nannie C. Bohlin	"	97	Halifax, N.S	145	50
Annie Wesley	"	65	Tusket, N.S	97	50
Marguerite	"	81	Barrington, N.S	121	50
S. R. Lane	"	48	Lockeport, N.S.	72	00
Pinta	"	68	Canso, N.S	102	00
Arbitrator	"	73	"	109	50
Eliza H. Parkhurst	"	84	Arichat, N.S.	126	00
Bessie M. Devine	"	91	Port Hawkesbury N.S.	136	50
Senator	"	75	Port Mulgrave N.S	112	50
Judique	"	89	Canso, N.S	133	50
Gertie Evelyn	"	61	Arichat, N.S.	91	50
Conductor	"	50	Canso, N.S	75	00
Margaret Mathers	"	66	Pubinco, N.S.	99	00
Ralph F. Hodgdon	"	60	Port Mulgrave, N.S	90	00
Viking	"	40	Canso, N.S.	60	00
Lizzie Griffin	"	71	"	106	50
F. W. Homans	"	44	Port Mulgrave, N.S	66	00
Wm. Matheson	Provincetown, Mass.	72	St. Peters, N.S.	108	00
Golden Hope	Gloucester, Mass	75	Arichat, N.S.	112	50
George E. Campbell	"	78	"	117	00
Masconoma	"	67	"	100	50
Gladiator	"	75	Port Hawkesbury, N.S.	112	50
George S. Bontwell	"	43	Port Mulgrave, N.S.	64	50
Edgar S. Foster	Bucksport, Mass	79	St. Peters, N.S	118	50
Willie L. Swift	Provincetown "	70	"	105	00

SCHEDULE of United States Fishing Vessels to which Licenses were Issued—*Concluded.*

Name of Vessel.	Port of Registry.	Tonnage.	Port of Issue.	Fee.
Oliver Eldridge	Gloucester "	48	Yarmouth, N.S	72 00
Annie G. Quiner	Bucksport "	79	St. Peters, N. S	118 50
Orpheus	Gloucester "	74	Lockeport, N. S.	111 00
Levanter	Salem, Mass	28	Yarmouth, N.S.	42 00
Winona	Gloucester, Mass	78	Amherst, M.I., Que.	117 00
Howard Holbrook	"	68	Port Hawkesbury, N.S.	102 00
John Smith	"	44	"	66 00
Martha Jane	"	16	Alberton, P.E.I.	24 00
Epes Tarr	"	48	Souris, P.E.I.	72 00
Elenora	"	62	Canso, N.S	93 00
Lizzie M. Stanwood	"	76	"	114 00
Emma M. Dyr	"	54	Arichat, N.S.	81 00
Reporter	"	60	Souris, N.S	90 00
Richard Lester	"	47	Port Hastings, N. S.	70 50
Mariner	"	78	Canso, N. S	117 00
Ralph E. Eaton	Gloucester, Mass	47	Port Mulgrave, N.S.	70 50
Florence	"	63	Canso, N.S	94 50
Oresa	"	58	"	87 00
M. H. Perkins	"	50	Port Hawkesbury, N.S.	75 00
Ellen F. Gleason	"	42	Canso, N.S.	63 00
Edward A. Rich	"	58	"	87 00
Loring B. Haskell	"	67	Souris, P.E.I	100 50
Nereid	"	70	Canso, N.S	105 00
Procyon	"	85	"	127 50
Boyd & Leeds	Beverly, Mass	37	Barrington, N. S	55 50
E. C. Hussey	"	42	"	63 00
S. L. Foster	S. W. Harbour, Me.	44	Liverpool, N.S.	66 00
Norman Fisher	Gloucester, Mass	51	Canso, N.S	76 50
Oliver F. Kilham	Salem, Mass	44	Liverpool, N.S.	66 00
Anna L. Sunborn	"	17	Yarmouth, N.S	25 50
Total 79 vessels		5,316	Total	$7,974 00

It will be noticed that there are nearly double as many licenses as in 1897. I put this down to the scarcity of bait on the United States coasts; there is no doubt in my mind that the procuring of bait and shipping of men are by far the most important items included in the license, after that the transhipment of cargo. As regards buying provisions, stores, &c., I think it would greatly assist our merchants and others in the small coast towns if this were to be allowed. However, no doubt all these highly important details are being taken into consideration by the Joint High Comissioners.

The following is a statement of the number of licenses issued since 1888:—

1888	36
1889	78
1890	119
1891	98
1892	108
1893	71
1894	53
1895	47
1896	77
1897	40
1898	79

The following list of United States Fishing Vessels which have entered Canadian Ports, from 1st January, to 31st October, 1898, showing the number of times each vessel entered at the several ports; will show to what a large extent our ports are used by foreign fishermen. Nearly all those schooners were boarded by our cruisers, and most of them a good many times.

Number.	Name of Vessel.	Arichat.	Barrington.	Canso.	Georgetown, P.E.I.	Halifax.	Liscombe.	Louisbourg.	Lockeport.	Lunenburg.	Port Hawkesbury.	Port Hood.	Port Mulgrave.	Shelburne.	Souris, P.E.I.	Whitehead.	Yarmouth.	N. Sydney.	Liverpool.
1	Arbutus																		2
2	Atlanta																		1
3	Alice R. Lawson			1				1									2		
4	Arbitrator			3		1									1		2		
5	Annie C. Hall			1				1						4		1		1	
6	Admiral Dewey			1															
7	Annie Wesley			1				1	1					1			2	1	1
8	Alice C. Jordan							1								1			
9	Alva							1						1					1
10	Addie Davidson							1											
11	Alice S. Hawkes							1										1	
12	Agnes E. Downs							1						2					
13	Alice M. Parsons													2					
14	A. S. Caswell													2					
15	A. R. Cutherton													1					2
16	Argo														1				
17	Arthur Story															1			
18	Amy Wixon																4		
19	A. L. Sanburn																3		
20	Addie M. Story					1													
21	Arthur Binney																		2
22	Boyd & Leeds		2	1												1			
23	Blue Jacket			3													3	2	1
24	Bessie M. Devine			3							1						1		
25	Bertha May			2															
26	*Broganza							1		1				1					1
27	Belle Franklin													2					
28	Belle V. Neal																1		
29	Bertha Miller																1		
30	Bertha D. Nickerson																		1
31	Columbia		2	2													1	1	2
32	Conductor			4		2	2				1			1			3		
33	Carl W. Baxter			1		1												1	
34	Carleton Belle			1				1											
35	Carrie W. Babson			1				1											
36	Cecil H. Lowe							1						1					
37	Centennial																		1
38	Canopus							1											
39	Clara P. Sewell							1	2									1	
40	Carrie E. Phillips													1				1	1
41	Carrie H. Lane																	2	
42	Carrier Dove													2					
43	Commonwealth													6			2		1
44	Caroline Vought																1		
45	Dora A. Lawson					2		1											
46	D. A. Wilson							1											
47	David Sherman							1									1		
48	Davy Crockett													2					
49	Dawson City													1					
50	Dido																		3
51	Emma and Helen																		2
52	Eliza H. Parkhurst	5			1									1					
53	Emma M. Dyer	4		1		1								1					6
54	E. C. Hussey		1	1													2		
55	Elsie F. Rowe			2				1											
56	Effie M. Morrisey			1	2								1		3	1		8	
57	Elnora			4						1									1

*Outport—Chester.

List of United States Fishing Vessels which have entered at Canadian Ports, from 1st January, 1898, to 31st October, 1898, &c.—*Continued.*

Number.	Name of Vessels.	Arichat.	Barrington.	Canso.	Georgetown, P.E.I.	Halifax.	Liscombe.	Louisbourg.	Lockeport.	Lunenburg.	Port Hawkesbury.	Port Hood.	Port Mulgrave.	Shelburne.	Souris, P.E.I.	Whitehead.	Yarmouth.	North Sydney.	Liverpool.
58	Ellen F. Gleeson			5								1							
59	Edward Trevoy			1										1			2		2
60	Edward. A. Rich			2		1	1							2					
61	Epes Tarr			1	2								1		6		1		
62	Edith McInnes					1	2		1					1					7
63	Elsie M. Smith							1										1	
64	Ethel B. Jacobs							1						1	1	1		3	
65	Ellis S. Hawkes																		1
66	Essex							1								1	2		
67	Edith M. Jacobs																		1
68	Emma E. Wetherall							1									3		
69	Elector													1			2	1	
70	Edith M. Prior													4					
71	Edith S. Whalen													1					
72	Ester Anita					1								1		1			1
73	Elector P. Wedge																1		
74	E. B. Holmes								1					1			1		
75	Electra					1													
76	Eliza B. Campbell					2													
77	F. H. Smith			1															
78	Florence			5										2				1	2
79	F. W. Homans				2						1	2	1		4				1
80	Firmwood							1									3		1
81	Frances S. Orme							1						1			1	1	2
82	F. B. Haskins																	1	
83	Flora Nicholson													1				1	
84	Fanny W. Freeman																	1	
85	Florence E. Stream													4				1	
86	F. R. Walker													2			1		1
87	Gertie Evelyn	2		1		1					1								
88	Golden Hope	2									1			2					
89	Georgie E. Campbell	3		1							1			1					3
90	Gladiator	4									1					1		1	2
91	Gladstone			1				1	1										1
92	Grace L. Hadley			1	3								2		5				
93	George S. Boutwell				2	1							3		4				
94	Geneva Mertis							1											
95	Grayling							1	4								1		
96	Grace Darling							1											
97	George F. Edmunds										2		1		5	1		8	
98	Gen. Martin																	1	
99	Grace Otis								1					1			1		
100	Gloria													1					
101	Grace Choate													1					
102	Governor Butler													1					
103	Hattie L. Trask	1		2	1									1					
104	H. L. Whittier			1													3	1	
105	Hattie Evelyn			2															
106	Howard Holbrook			4	2						1		1		7				
107	Henry M. Stanley						1	1		1				1				1	1
108	Harvard							1											
109	Hellen F. Whitten							1										1	
110	Hellen H. Giles							1											
111	Harry G. French					1		1											3
112	Herald of the Morning							1											
113	Hiram Lowell							1						2					1
114	Hattie E. Worcester							1										1	1
115	*Hattie E. Heckman									2									1
116	Harry L. Belden																	1	1
117	H. W. Longfellow																	1	
118	Hazel Oneita																	1	

* Out Port Chester.

LIST of United States Fishing Vessels which have entered at Canadian Ports, from 1st January, 1898, to 31st October, 1898, &c.—*Continued.*

Number.	Name of Vessels.	Arichat.	Barrington.	Canso.	Georgetown, P. E. I.	Halifax.	Liscombe.	Louisbourg.	Lockeport.	Lunenburg.	Port Hawkesbury.	Port Hood.	Port Mulgrave.	Shelburne.	Souris, P. E. I.	Whitehead.	Yarmouth.	North Sydney.	Liverpool.
119	H. B. Parker										1								
120	Harvester													2					1
121	Hattie and Lottie													1					
122	Indiana			1				1											
123	Iolantne			1															
124	James A. Garfield		1											1					
125	Judique			4							1								1
126	John Smith			1	2						1		1		5	1			
127	Joseph Rowe			1													1		
128	Joseph B. McGuire							1											
129	Jennie B. Hodgdon							1											2
130	John S. Presson							1											
131	J. E. Garland													1				1	
132	John L. Nicholson												1		4			9	1
133	Jonathan																	1	
134	J. F. Edwards																	1	
135	James R. Clarke													3					
136	James S. Steele													2			1		
137	J. W. Collins					1								1					1
138	James Rowe																1		
139	J. R. Walker																		
140	James G. Blain																		1
141	*Kearsage			2				1		1			1					1	
142	Lizzie Griffin	2		3							1								
143	Laurence A. Munro		2	1					2										
144	Loring B. Haskell				2	1							1		4			4	6
145	Lizzie M. Stanwood			2								1		1	1				
146	Lucille			1			1	1								1			1
147	Lizzie Maud							1											
148	Lizzie B. Adams							1	2								1	1	
149	Lillia E. Norwood							1									1		
150	Lottie Gardener							1											
151	Lizzie M. Center							1						1					1
152	Louis H. Giles							1											
153	Lena & Maud																	1	1
154	Lizzie W. Custer																	1	
155	Latona					1								5				1	1
156	Landseer													1			3		1
157	Lottie S. Howard																4		
158	Levanter								1								9		
159	Laurena Murdoch					1													
160	Masconomo	4		1												1			1
161	M. H. Perkins	1		2															
162	Mary Story		1																
163	Marguerite		4	1										3					
164	Miranda	2		1			1	1											1
165	Mertie & Delmar			1				1											
166	Meteor			1													2		
167	Mabel D. Hines			1													2		
168	Mariner			2				1						1					1
169	Mattie Winship			1				1									1		
170	Margaret Mathers			1				1	1					1			3		
171	Madonna			2													2	2	
172	Marinda						1												
173	Mertes H. Perry							1						1					
174	Marshall L. Adams							1	1					2					1
175	M. S. Ayer							1											3
176	Mandego							1											1
177	Mabel Kenniston							1						3				1	2
178	Margaret Haskins					1		1		1							1	6	
179	Maggie Smith							1											

LIST of United States Fishing Vessels which have entered at Canadian Ports, from 1st January, 1898, to 31st October, 1898, &c.—*Continued.*

Number.	Name of Vessel.	Arichat.	Barrington.	Canso.	Georgetown, P. E. I.	Halifax.	Liscombe.	Louisbourg.	Lockeport.	Lunenburg.	Port Hawkesbury.	Port Hood.	Port Mulgrave.	Shelburne.	Souris, P. E. I.	Whitehead.	Yarmouth.	N. Sydney.	Liverpool.
180	Margaretta																1	1	
181	Maggie May																	1	
182	Mystery																2		
183	Martha Jane										1		2						
184	Mizpah													1					1
185	Mary F. Chisholm													2					
186	Mabel Leighton													1					
187	M. B. Stetson													1					
188	Marsala																3		
189	Maud Miller																1		
190	Minerva																1		
191	Margaret					1		1											
192	Nereid	1		1				1						1					4
193	Nelson Y. McFarland			1															
194	Norman Fisher			1															
195	Norumbega				2						1		1	1	3			4	
196	Nellie Dixon													3			4		
197	Nourmahal													1					1
198	Nannie C. Bohlin					3													
199	Noonday																		1
200	Otis P. Lord	1	1	1				1										1	
201	Oliver Eldridge	1				1											2	2	
202	Oresa	1		2				1	1					4			1		3
203	Oliver W. Holmes		1					1						2				2	
204	Orpheus			3					7									2	1
205	O. L. Killam																1		4
206	Pinta			4	1									1					
207	Parthia			1				1									2	1	1
208	Puritan			1													1		1
209	Patriot			1										2					
210	Procyon			3					1					1		1			2
211	Pythian						1	1										2	
212	Polar Wave							1											
213	Pendrogan							1									1		
214	Quick Step													1					3
215	Ralph F. Hodgdon			4		1	1						2	1					1
216	Ralph E. Eaton			1				1			1		1		4			3	2
217	Ramona			1										1					
218	Richard Lester				2						1		1	1	4			3	1
219	Ruth M. Mather							1						1					
220	* Reporter									1	1		1		4				
221	Regie																	1	
222	Republic																	1	
223	Robin Hood													1					
224	Rigel													1					
225	Ruth and Martin																2		2
226	R. H. Hodgdon																		1
227	Senator	3		1							1	1	1	1					
228	Senator Salisbury	2						1									2	1	
229	Sarah H. Prior	1					1												
230	Sigfred	1		1				1											
231	Senator Swansburg		1																
232	S. R. Lane			1				1	4								1		1
233	Shenandoah			1				1									2		
234	S. P. Williard			1		1		1											1
235	S. F. Maker			1												1			
236	Sarah E. Lee							1											1
237	Susie Hooper							1										1	
238	Samuel R. Crane							1											
239	Stranger							1	3					2					1
240	Speculator							1						3					1

* Out—Port La Have.

List of United States Fishing Vessels which have entered at Canadian Ports, from 1st January, 1898, to 31st October, 1898, &c.—*Continued.*

Number.	Name of Vessel.	Arichat.	Barrington.	Canso.	Georgetown, P. E. I.	Halifax.	Liscombe.	Louisbourg.	Lockeport.	Lunenburg.	Port Hawkesbury.	Port Hood.	Port Mulgrave.	Shelburne.	Souris, P. E. I.	Whitehead.	Yarmouth.	N. Sydney.	Liverpool.
241	Sea Fox								1					1		1		1	2
242	Sarah M. Jacobs																		1
243	S. H. Smith																		
244	S. E. Nightingale																1		
245	S. L. Foster																		1
246	Sarah																		1
247	Thetis		1			2		1						1			2	2	
248	Triton			1															
249	Talisman							1						2					1
250	Thomas Brundage																1		
251	Viking			3		1	1							1		1			1
252	Vigilant			1										3					2
253	Vesta			1													1		
254	Virginia							1	2									1	2
255	Volunteer													1					
256	William H. Cross																		1
257	Wide Awake	1		1										1					
258	William E. Morrisey			1				1									1	1	
259	William Matheson							1											
260	* W. H. Moody					1				1							7		
261	Winona					1											3	1	
262	W. H. Ridel					1													
	Total entries	42	17	132	24	35	13	86	37	9	20	5	23	140	66	17	125	108	

Memo.—Total number of entries at 18 Canadian ports, 1,037.

SUMMARY.

Entries of United States Fishing Vessels at Canadian Ports, from 1st January, to 31st October, 1898, showing the number of entries made at the several ports.

Arichat	42
Barrington	17
Canso	132
Georgetown	24
Halifax	35
Liscombe	13
Louisburg	86
Lockeport	37
Lunenburg	9
Port Hawkesbury	20
Port Hood	5
Port Mulgrave	23
Shelburne	140
Souris	66
Whitehead	17
Yarmouth	125
North Sydney	108
Liverpool	138
Total number of entries at 18 Canadian ports	1,037

Lsit of United States Fishing Vessels using Marine Railway in Canadian Ports for the purpose of Repairs, etc.

No.	Name of Vessel.	Year.	Place Repaired, &c.
1	Lizzie M. Center	1893	Halifax, N.S.
2	Herbert E.		"
3	Hattie H. Graham	1894	"
4	Norumbega		"
5	Puritan		"
6	Ralph E. Eaton	1895	"
7	Rush Light		"
8	Epes Tarr		"
9	George F. Edmunds		"
10	Ella Frances		"
11	H. A. Parkhurst		"
12	Carrier Dove		"
13	H. A. Parkhurst	1896	"
14	Volunteer		"
15	Lizzie J. Gree.leaf		"
16	O. W. Holmes		"
17	J. E. Garland		"
18	Notice (9th July)	1897	"
19	Notice (28th July)		"
20	Ralph E. Eaton	1898	"
21	George S. Boutwell		"

Attached is a list of Mahone Bay and La Have fishing schooners and their catch:

LA HAVE BANKERS.

	Lbs.		Lbs.
Grace	277,000	Talmouth	285,000
Jennie Myrtle	360,000	Beluga	240,000
Mischief	200,000	Millie Mace	370,000
Torridon	290,000	Lillian	490,000
Enterprise	240,000	Gallant	300,000
Klondyke	370,000	Algonia	310,000
Lerane C.	300,000	Cayuga	400,000
Ashton	300,000	Alaska	290,000
F. B. Wade	340,000	Loreana Maud	475,000
Minnie J. Heckman	320,000	Eureka	270,000
Puritan	260,000	Majestic	355,000
Comrade	450,000	Uruguay	465,000
Manal M. Parks	240,000	Citizen	470,000
Barcelona	420,000	Minnie Maud	230,000
Joseph McGill	360,000	Leopold	395,000
Carlaraine	390,000	Avis	260,000
M. J. Crosby	200,000	L. B. Currie	220,000
Bessie A.	185,000	Curfew	180,000
Carrie	265,000	Glyndon	340,000
Volunteer	360,000		

LA HAVE NORTH BAY MEN.

Fern	280,000	Roana	215,000
Britannia	220,000	Cambrian	300,000
Georgenia	80,000	Melbourne	250,000
Puma	220,000	Mystic Tie	260,000

LA HAVE LABRADOR MEN.

	Lbs.		Lbs.
Magie	40,000	G. A. Smith	50,000
Gernada	90,000	Abana	100,000
Melutas	60,000	Nightingale	40,000
Valiant	50,000	Garnet	40,000
Onando	60,000	Gindale	55,000
Mayflower	11,200	Garland	50,000
Elnora	70,000		

MAHONE BAY LABRADOR MEN.

Nova Zembler	40,000	Lenora	35,000
Irene M. B.	40,000	C. A. Ernst	40,000
D. A. Maker	60,000	C. A. Chisholm	85,000
Marzella	45,000		

MAHONE BAY BANKERS.

Laura C. Zwisker	260,000	Venim	300,000
Unique	320,000	C. U. Maker	160,000
Elva M.	340,000	Flo Maker	280,000
Jennie V.	345,000	Blanch Camp	400,000
Snow Queen	200,000	Lawrance	320,000
Daisy Linton	300,000	Enezey	400,000

Although the La Have fleet is not obtainable, it is estimated that the total catch has been about 25 per cent below that of 1897.

THE MACKEREL FISHERY.

The mackerel catch of 1898 has again been a distinct failure, I may say, everywhere. A few U. S.vessels did fairly well to the southward, but otherwise it has been most disappointing. It is very hard to define the reason for this, but I personally believe that the use of that abominable engine, the purse seine, is very largely to blame; when this seine appeared mackerel began to disappear at all events, and so it seems reasonable to blame this mode of fishing more or less. I have constantly advocated some international agreement by which the purse seine would be entirely forbidden until the 1st of July, at any rate, the fish have not finished spawning till this date, in this condition they will not take the hook, but the purse seine catches them anyhow, and the mackerel is therefore left absolutely unprotected. Some people are under the impression that these fish are driven off the coast by the large amount of decayed lobster bait, broken and rotten lobster traps, &c., but personally I hardly agree with this theory, it is not only on the coast that mackerel are scarce, but the same applies everywhere, it matters not how far from land, and it is impossible to think that this decayed bait, &c., would affect these deeper waters. At the present time few mackerel are salted, the trade in fresh fish taking nearly all the catch. On the 20th of May (it is a peculiar coincidence that it is always within a few days of this date) there were about 65 U. S. fishing schooners on and off our coasts. Last year there were about 100, nearly all these vessels hail from Gloucester, fair catches were made off Yarmouth, and the fish were worth 25 cents a piece. On the 25th May catches were made off Prospect, N.S., but the fish were in small schools and very wild. On the 28th they were off Canso; the cruisers "Osprey," "Kingfisher," "Curlew" and "Acadia" were stationed on different grounds along the coast and the U. S. fishermen were kept company with the whole time. On the 1st June the U. S. schooner "O'Resa" had about 240 barrels, and other vessels had done fairly, but in my opinion the body of the fish passed ahead of the seiners, and by the middle of June most of the U. S. seiners were on their way home with small catches. They did better after this off their coasts; the "Jacobs" getting 350 barrels off No Man's Land. On arriving back off our shores the prospects were very poor indeed, the month of August was certainly the poorest ever experienced in the mackerel fishery ; and these matters did not improve, stormy and bad weather interfering with operations in the fall.

LOBSTER.

The lobster catch of 1898 will be again small, probably behind that of other years; it was partly due to the bad weather during the lobster season. The fishing season was not extended and I have before pointed out in another portion of my report what intense trouble and annoyance fishermen who would persist in fishing illegally gave. The ground, in my opinion, is being over-fished, and will be absolutely fished out sooner or later. The lobster commission which is at present sitting will no doubt be able to arrive at some way of overcoming this evil. There are too many small factories ; the live lobster business which used to be confined nearly entirely to the western part of the province, is steadily moving east and now live lobsters are shipped from Louisburg.

EXTRACTS FROM REPORTS OF CAPTAINS OF CRUISERS.

SIR,—In compliance with your orders, I beg to hand you my report of work done by the cruiser "Osprey" under my command for the season of 1898.

By your order I proceeded to Shelburne and placed the cruiser "Osprey" in commission on the 26th day of April, and proceeded towards Halifax on the 28th, but was detained by contrary winds. Arrived at Halifax, May 1st ; weather foggy and disagreeable. 6th May by your order we proceeded to sea, sailing along southern coast of Nova Scotia, calling at several ports : 13th passed through Mainadieu passage, midnight at North Sydney. Thence we cruised north around Cape Breton to Charlottetown and Magdalen Islands, remaining at the latter place until the herring was over. We found, as before, a large fleet of Canadian trawlers and small vessels buying herring; only an occasional U. S. trawler.

We then proceeded towards the N. S. coast via Charlottetown and Pictou, and arrived at Canso (our headquarters) on the 7th of June, and cruised east and west as the weather permitted. Weather exceedingly foggy and wet. Also with occasional runs to Prince Edward Island and Pictou until October 24th, when by your order we proceeded to Sydney and arrived on the 25th where we found eight U. S. seiners who reported that mackerel were very scarce. We continued to cruise with fleet until November 5th when by your order we proceeded towards Shelburne, calling at Whitehaven, Liscomb, Spry Bay and placed ship in winter quarters at Shelburne on the 11th day of November.

C. T. KNOWLTON,
Commanding "Osprey."

CRUSIER "CURLEW,"
ST. JOHN, N.B., 31st December, 1898.

Commander O. G. V. SPAIN, R.N.,
Commanding Fisheries Protection Service,
Department of Marine and Fisheries, Ottawa.

SIR,—I have the honour to forward you my annual report on the various operations engaged in by this ship during the past season of 1898.

During the winter of 1897 and 1898 the ship was laid up as usual in Magee's dock at this port, and the necessary repairs were made to the boiler and engines. Some other detail work about the ship was attended to, and everything was in seagoing order by April 15th. On that date the ship's company were signed and the ship went into commission. Bad weather prevented sailing from St. John till next day and arriving down the bay on the fishing grounds I was very busy till the 14th May in issuing fishing licenses for the numerous weirs, arranging many fishery disputes, and completing a large amount of general fisheries business that was awaiting my arrival. Small herring for sardine purposes began to show up on the shores of Charlotte County about 1st of May, but none of the numerous sardine factories at Eastport and Lubec began canning till June 1st when the catch in the weirs did not equal more than 25 per cent of the demands of the canneries. However, the prices per hogshead of herring ran up very high on several occasions. Many years have passed since such high prices were received by our weir fishermen, and it is hoped that the contemplated increase in the pack of the sardine factories will ensure better prices in the future for our weir fishermen.

Steaming around Cape Sable on May 17th I found the U. S. mackerel fleet cruising for mackerel between Lockeport and Lunenburg. The first school of mackerel, consisting of 50 barrels, was taken off Liverpool on May 19th by one of this fleet. We cruised with this fleet between Lockeport and Halifax till 25th inst., when you ordered us to cruise as far as Canso. A run was made to Halifax where we landed our six-pounder gun and Winchester rifles, and received a Gatling with a complement of Sniders.

Cruising eastward to Canso and the Cape Breton coast I found at intervals vessels of the U. S. mackerel fleet, who were making very poor catches, which they attributed to stormy weather and frequent fogs.

North Sydney was reached on the 7th of June where the ship was bunkered and Inspector Bertram joined us. With this officer on board we proceeded on a cruise up the coast visiting numerous lobster factories, also cruising up Big Bras d'Or Lake, where Mr. Bertram left the ship.

After passing through St. Peter's Canal a run was made towards Lunenburg, arriving there on the 11th of June, and Inspector Hockin joined the ship. Steaming into St. Margaret's Bay and as far east as Dover, the resident mackerel fishermen were found to have set their mackerel traps without previously procuring a license for same from the local fisheries officer. Considerable opposition against the taking out of licenses was experienced by us from the several trap owners, but eventually they all paid the requisite fees and the licenses were issued to them.

Not until June 16th did we complete our work with those trap fishermen, and were then ordered by you to cruise to the Bay of Fundy. We arrived at Passamaquoddy on the 20th where fishing of all kinds was found in full operation. The fishermen were making fairly good catches and good prices were being realized by them.

During the short visit to my district, numerous fishery disputes were settled, overseers visited and licenses and orders were issued regarding various matters requiring immediate attention. On June 29th the Bay of Fundy was again left behind and Halifax was visited for the purpose of beginning the patrol of coast between there and Canso, and preventing the illegal lobster fishing so long carried on there during previous close seasons. We cruised along the coast to the eastward, visiting all the harbours and destroyed many hundreds of traps. Thousands of lobsters were liberated, factories were visited to see that they were not in operation, and suspected persons were warned of the fate that awaited them should they become implicated in the violation of any of the lobster regulations.

On the 12th and 13th July we ran into the greatest number of traps, setting between Dover and Canso, where the practice of fishing up to the 15th of July had been carried out each year. This was quite feasible here, on account of its proximity to the line where the close season does not commence till the 15th. By the havoc that we made here at Dover among the lobster gear, I am of the opinion that the fishermen will not exhibit the same carelessness in leaving their lobster gear in the water in future at the expiration of the lobster season. On July the 15th, at Canso, I received, according to your instructions, from Messrs. Whitman the tug " Active " and placed her in the Government service in charge of First Officer Burns of the " Curlew." Two seamen were given him also, and two from the " Osprey," and her equipment was completed by the 22nd. We left Canso in company and began cruising westerly after illegal lobster fishing.

This work between Canso and Halifax was continued till August the 16th, when Inspector Bertram was taken on board at Port Hawkesbury and we began a cruise around Cape Breton in the interests of the various fisheries, lobsters particularly. Numerous factories were visited, and warnings given to several suspected persons. Mr.

Bertram left the ship on the 29th August, and we returned to our station between Canso and Halifax. On September 18th we returned to the Bay of Fundy for a short cruise, passing the steamship "Express" ashore at Shag Harbour on our way. We found fishery matters being prosecuted with unusual energy and the catches up to the average.

The location for the new life boat station at Grand Manan was selected by Capt. Douglas, R.N.R., on September 26th, who joined the "Curlew" at Eastport on that date. October 1st again found us steaming for the eastward of Halifax enforcing lobster regulations, and on the 11th and 12th of same month, in company with the other cruisers, at Georgetown, P.E.I., we participated in the Fisheries Protection Sports. Those sports were very highly enjoyed by the officers and crew of this ship, and are now always looked forward to with feelings of pleasure and expectation. There is no doubt that these sports are of immense benefit to the service.

The Challenge Cup which was held by a team from this ship for rifle shooting, at this competition was allowed to go to the "Kingfisher."

Steaming out of Georgetown on the night of the 15th, Pictou was visited for bunkering purposes, and steaming to Basque Island, three men were arrested for illegal lobster fishing, on warrants issued by Inspector Bertram. They were taken before this officer at Arichat, and in default of payment of fines were committed to prison.

After a run to Sydney we steamed to Halifax, arriving on the 25th October, Commissioner of Fisheries, Prof. Prince, and lobster commissioners Levatte, Whitman and Nickerson joined the ship there for the purpose of procuring information regarding the lobster fisheries at the principal ports in Nova Scotia and Cape Breton. They took evidence at the various points, leaving the ship at North Sydney on November 5th. A final visit was then made by us to the harbours between Canso and Halifax, destroying some lobster pots in Halifax Harbour, and leaving the Gatling in the Marine and Fisheries store at Halifax. Cruising to the Bay of Fundy we arrived at Grand Manan on the 23rd and began the taking of bounty claims at the several fishing villages in Charlotte County. This, with other fisheries work kept us busy till December 9th, when we steamed to St. John placing ship out of commission and paying off crew that day.

Next day the engineers and firemen began some repairs to machinery, and are now employed at that work.

I have the honour to be, sir,
Your obedient servant,
JOHN H. PRATT,
Commanding "Curlew."

NORTH HEAD, GRAND MANAN, Dec. 30th, 1898.

Commander O. G. V. SPAIN, R.N.,
Commanding Fishery Protection Service of Canada.

SIR,—I beg to report as follows on the work done by the "Kingfisher" under my command during the season just closed.

In March I received orders from yourself to commission the "Kingfisher" on May 1st at Halifax. I arrived there on the 27th April to superintend some repairs, painting, &c. On May 2nd, the crew was signed in and the ship placed in commission, and on the 4th of that month I sailed for my station off Shelburne, and we cruised off Cape Sable until the 28th of May.

The first American seiner arrived on May 11th, after which the fishing fleet commenced to make their appearance from day to day. The fish not showing in any large quantities to the westward, the fleet then moved to the east, but with poor success. The foggy weather which has prevailed on the coast, more especially in the spring for the last two years has hampered the fishermen, making it almost impossible to locate the schools of mackerel.

I ran down in the fog to the eastward, not seeing anything until I reached Cape Canso, when the fog lifted and I saw a few seiners who had been down the Cape Breton coast, but reported that they had not seen any fish schooling, and were returning west. I cruised about Cape Canso, St. Peter's Bay and Chedabucto Bay for a few days. The American fleet were passing every day in small numbers for home—their catch was very small—I was informed an average of twenty-five barrels per vessel for the whole fleet engaged on the Cape shores.

On June the 5th I received orders from you to proceed to Charlottetown, P.E.I., to have ship's company measured for uniforms. We arrived there the next day, meeting the cruiser "Acadia" off the harbour, where I received from yourself further instructions.

From Charlottetown we came back to Pictou to go on the marine slip for repairs. On the 9th June we hauled over on the slip and have the ship caulked from keel to gunwale, also painting two coats outside. After finishing repairs, acting on your instructions, I proceeded to Prince Edward Island to swear in all the light-keepers as fishery officers. I commenced taking the lights in rotation west through the Straits of Northumberland and down the north side of the island, arriving at my station off Souris on the 26th of the month.

The first American arrived on July 8th. The fleet was very small this year and the mackerel fishery proved a failure in all parts of Prince Edward Island. The American vessels were constantly on the go from Cape Breton to Cape Gaspé, but no mackerel being obtainable except about the Magdalen Islands and East Point, there were no large hauls made at any time—four or five barrels being the highest catch in any one day.

After the lobster close season came on, I made some seizures of traps, and also seized one small cannery at North Side, Prince Edward Island.

On October 4th I made a seizure of twenty casks of rum from St. Pierre, which was landed at Rouleau Bay.

By October 18th all the American vessels had left the Gulf to go to Sydney for the fall catch. By your orders I followed on the 20th. I found only seven vessels at Sydney. They remained until November 16th, when the last one left for home. The catch was practically nothing—the highest vessel getting about four barrels. The "John L. Nicholdson" was the last to leave. This vessel had been down four months and returned with sixteen barrels of fish.

I left Sydney for the west on the 21st November, and experienced terrible weather. We simply could not get westward only at a very slow rate. I rode out the very heavy gale of the 27th November at Whitehaven. I cruised along the shore trying to look after the illegal lobster fishing, but the weather was so boisterous that with a sailing vessel about all we could do was to look out for ourselves. I must say, however, that the coast was very clear of any poaching this fall, more so than any year since the service commenced.

I came on to Halifax, calling at Lunenburg, thence to Shelburne, where I paid the ship out of commission on December 15th, and delivered her over to Mr. McLean, caretaker.

My crew this year was very satisfactory. I have not a single case of disobedience to report during the season, and would respectfully recommend that such fine young men be retained in the service if possible.

Our Fishery Protection annual sports were held at Georgetown, P.E.I., on the 4th and 5th October. They passed off very pleasantly indeed, and my ship had the honour of winning the Fishery Protection Cup of Canada in the rifle competition. Next year, we hope to make these sports even more interesting.

All of which is respectfully submitted.

I have the honour to be, sir, your obedient servant,

W. KENT,

Commanding "Kingfisher."

OWEN SOUND, Dec. 30th, 1898.

Capt. O. G. V. SPAIN, R.N.,
Commanding Fisheries Protection Service of Canada,
Ottawa.

SIR,—I have the honour to submit the annual report of the work performed by the Cruiser "Petrel" for the year 1898.

In obedience to your instructions, the cruiser was fitted out and placed in commission on the 13th day of April, and a departure made for Lake Erie. On the way I tested the compasses on ranges to ascertain the deviations, then proceeded to destination, arriving at Amherstburg on the 14th. On the 15th I made a flying trip down the lake, keeping about 15 miles from the Canadian shore, hoping to capture any poachers if, as reported, they were fishing at this distance from our shores. Although a sharp look-out was kept, neither boats nor buoys were observed during a run of 190 miles, proving to me that the reports were very much exaggerated. On the 18th, I returned to Amherstburg for the purpose of placing gas buoys in position, but, on account of unfavourable weather, was unable to do so until the 22nd, when the work was successfully accomplished. On the 23rd, I made a seizure of one hundred American gill-nets, containing over a ton of fish. On the 24th, fish were sold, nets dried and stored at Port Stanley. On the 30th, I made a seizure of 22 gill-nets, belonging to our own fishermen fishing without license off Leamington, and on May 2nd I fined one of the owners, who was caught in the act, $20, which was paid to fishery officer Lamarche, and by him forwarded to the department. On the same day I placed spar buoys on Grecian Shoal and North Harbour Reef. On the 17th, settled dispute between fishermen at south end of Pelee Island. On the 24th, as directed, proceeded to Port Stanley to celebrate Queen's Birthday. The ship was dressed, and royal salute fired. On the 26th I made a seizure of 195 American gill-nets. These nets were set without buoys, and were got by grappling. They contained a large quantity of fish, chiefly herring and perch. 27th and 28th, sold fish and cared for nets. June 2nd, fourteen American gill-nets were seized by me, which, as before, were got by grappling, and contained a small catch of fish. On the 17th, at the request of Collector Gott, of Amherstburg, I again located the wreck of the SS. "Grand Traverse" and, after carefully sweeping over same, found twenty-three feet the least water, which I reported to the collector. 18th, placed buoy on south end of middle ground to guide Government parties laying cable from island to mainland. 28th and 29th, investigated charges of illegal fishing by Pelee Spit light-keeper, and others; found there was no truth in the charge. 30th, off Long Point, found fishing-tug "Hazard" with disabled engines; took her in tow to Port Dover July 1st, by direction, celebrated Dominion Day at Port Dover; ship was dressed and a salute was fired. Afterwards, ship was thrown open to the public. 14th and subsequent days I investigated report of destruction of small fish by improper fishing, which was fully reported upon. 23rd, I made a seizure of ten American gill-nets off Long Point, and also attached notices to other net buoys, which were slightly to the north of the boundary line. August 2nd, sold confiscated nets to J. Ellison for the sum of $392.15. On the 22nd, off Long Point I made a seizure of 23 American whitefish gill-nets, containing upwards of 800 pounds of whitefish; sold fish at Port Dover. September 19th, arranged with Capt. Gavin, of the Government dredge "Ontario" to keep him under my lee, and, if wind increased to a dangerous height, would intercept him and take dredge in tow, which I did for two hours, or until we met tug coming to his assistance. On the 29th, Judge Horn, William McGregor and M. C. Cowan, M.P.'s, and party, came on board at Windsor to proceed to Pelee Island to hold Court of Revision. 30th, returned to Windsor with judge and party. October 14th, Capt. Bloomfield Douglass came on board at Port Stanley, whom I conveyed to Pelee Island for the purpose of inspecting life-saving station, which was accomplished on the 15th, and proceeded on to Amherstburg. 16th, Capt. Douglass left ship for station at Goderich. 28th, sold 23 nets to McKee, of Port Maitland, the highest tenderer, for $33.35.

On November 8th, while grappling, caught nets (four), which has evidently broken adrift from a gang during the recent gale. 12th, sold the four nets mentioned above to

Capt. Henning for $4, nets considerably torn. 14th, took boat supplies and light-keeper's son to Colchester Reef light. 16th, seized 13 American whitefish gill-nets got by grappling between the Bass Islands and the Hen and Chickens. 17th, three more American whitefish gill-nets were got by grappling, near place of former seizure.

On the 18th, the weather being favourable, and calm, I concluded to take up the gas buoys as the weather had been so stormy and unsettled during the two previous months. The work was successfully accomplished, spar buoys being attached to their anchors in both cases. The gas buoys were towed to Amherstburg and given in charge of A. Hackett, light-keeper of Bois Blanc Island.

On the 21st, took up black spar buoy off North Harbour Reef. 25th, took up spar buoy from Grecian shoal. 29th, took up spar buoy off shoal north-east of Detroit River light, which Light-keeper Hackett, on account of rough weather, had been unable to do.

On December 3rd, when inspected by you, I was again very much pleased to receive your words of approval, as to the state of efficiency in which you found the ship, officers and crew. On the same date a departure was made for Owen Sound. Goderich was reached on the 4th at 6.05 p.m. in a blinding snow storm, which continued almost without interruption for the next ten or eleven days, when, it being impossible to get out of harbour on account of ice, secured ship at that port. The steamer "St. Andrew, which was bound for Owen Sound, or Midland, was also compelled to lay up there.

On the 15th, Second Officer Jarvis and five of the crew signed off, the balance of officers and crew did so on the 21st.

REMARKS.

The same mode of patrol, which I have found so efficient in former years was maintained, our movements being erratic, and as quickly made as possible. This is necessary on account of the length of the lake, and the short distance which the American fishing stations are from the boundary line, where the fishermen receive information (as near as they can find out) as to the whereabouts of the "Petrel." Of course these continuous and comparatively rapid movements necessitates the consumption of a large amount of fuel. But for these waters, this is unadvoidable. Except when prevented by the weather, a continuous patrol was kept up, from end to end of the lake, and I find the "Petrel" has logged close upon 17,000 miles during the past season, and, had not the fall months been so exceptionally stormy, a much greater number of miles would have been logged.

The fishing in this lake (Erie) was very uneven, in some portions extra good fishing was made and at others very light. Off Port Maitland the gill-nets were a decided success. When interviewed, the Martin Bros. said, to use their own language, "We have struck a Klondike."

At the west end of the lake off Pelee Island during November, Capt. Henning, with a limited number of gill-nets took from four to six tons of herring each lift. The pound-net fishing was very good from Point Pelee east for thirty or forty miles. The rest of the lake was not so good, owing, I think, to the unsettled weather, last season being the most windy I have ever experienced, the waters along the shore being kept very turbid.

The season's catch would. I think, have been up to, or over the average, but for the storms of September and October, which blew out large numbers of the pound-nets, that could not again be set, entailing great loss to the fishermen.

During the season I visited most of the lighthouses on Lake Erie some of them a number of times, all of which I found well kept and in fair condition.

I am, sir, your obedient servant,

E. DUNN,
Commanding "Petrel."

D. G. S. "QUADRA,"
VICTORIA, B.C., January, 1899.

Report of the "Quadra's" work during 1898 for the Commander of the Fisheries Protection Service.

Owing to the increased number of lighthouses and other aids to navigation to be attended to during the season of 1898, the time devoted to other important duties was necessarily small.

In the early part of the year two cruises were made along the coast of British Columbia and as far as Wrangel in Alaska, first with Mr. Louis Coste of the Public Works Department, and secondly with Colonel Anderson, Marine and Fisheries Department, Ottawa, respectively. The first cruise with Mr. Coste was made, mainly with the view of inspecting several of the Northern Inlets suitable as a terminus for an all-Canadian route to the Yukon, and with Colonel Anderson to select sites for several proposed new lighthouses, which lighthouses have, during the year 1898, been erected.

On the 27th of June the "Quadra" left Victoria for a cruise on the west coast of Vancouver Island in the interests of the sealers, who at this time of the year, when on the eve of sailing for the Behring Sea portion of the sealing cruise, have frequently a difficulty in making the Indian hunters rejoin their vessels. The presence of the fisheries cruiser at the different villages, scattered along the west coast of the island, and at which villages the sealing schooners obtain their hunters, is a great incentive to the Indians to carry out their engagements, and, with the exception of two places, at all the villages where the "Quadra" called, the Indians went quietly on board their vessel, much to the gratification of the interested sealing men. At Nootka and Clayoquot I found it necessary to hold a court at which several Indians were convicted of refusing to join their vessels; at the former place, after conviction, the men were allowed time for reflection on the subject of whether they would join their vessel or go to prison, and they wisely chose the former. At Clayoquot, owing to an informality in the articles, I declined to convict, and the men were ultimately engaged in the same vessel at an increased rate of pay.

This annual work of the "Quadra" on the west coast of Vancouver Island is greatly appreciated by the sealing community. During the cruise revenue work was also attended to, the wreckage from a vessel recently wrecked, the "Jane Grey," being taken charge of at each place where it had been picked up and sold by myself as acting receiver of wreck, at public auction on the spot, the proceeds of the sale being handed over to the receiver of wreck on the return of the "Quadra" to Victoria.

This taking charge of all wreck had a most salutary effect on the Indians who have an idea, and have hitherto acted on it, that all wreckage picked up on the coast is the property of the tribe whose village is in the vicinity of where the find was made.

On the 2nd of September a visit was made on Fishery Service to the village of Claoose, and the river ascended in a boat for some miles, where an obstruction to the salmon ascending the river to the lakes, was taken away and an open stream left for the fish. The reason why it was necessary to remove obstructions being explained to the Indians, they promised not to rebuild them.

The remainder of the season was devoted to lighthouse duties, the ship being laid up for overhauling and painting on 31st of December.

JOHN T. WALBRAN,
Commanding "Quadra."

QUEBEC, 31st December, 1898.

To Commander O. G. V. SPAIN, R.N.,
Fisheries Protection Service, Ottawa.

SIR,—I have the honour to submit to you the following report of the duties performed by the Dominion Revenue Cruiser "Constance" under my command during the year just ended, 1898:—

According to instructions received, the "Constance" was placed in the Princess Louise Basin, Quebec, on the 29th November, 1897, for the winter. On the 20th January, 1898, my engineer and crew began their work on board to fit out and to do the necessary repairs to boiler, machinery, &c. 24th January work on the erection of a house over the boiler and engine by Mr. Marchand, and under the supervision of the writer, was commenced, and with the exception of some seven or eight days proceeded steadily until the finish of the same on the 14th April.

Sunday, 10th April, the ice-bridge opposite the city unexpectedly moved away with the falling tide.

Between the 11th and 14th April officers and crew joined the ship which was at once made ready for sea. Provisions and stores were received on board, and on the morning of the 21st we left port for the gulf.

The 24th April we were off Miscou, N.B., but could not proceed further on account of the large quantities of ice moving out from the Bay Chaleur, and were obliged to put back towards Gaspé, anchoring same night off Douglastown where we weathered out a heavy snow storm from the S.E.

On the 7th and 8th May we were anchored at Cape Magdalen on account of a strong N.W. gale with the thermometer at 20 degrees, snow squalls and vessel covered with ice.

18th May returned to Quebec for a fresh supply of coal and left again for the gulf on the 21st. From the latter date to 21st June our cruise was principally along the coast of Gaspé and across the Bay Chaleur to Miscou and Shippegan. 22nd to 26th was off the east end of Anticosti and vicinity.

From instructions received we left Gaspé on the 30th June for Port Hawkesbury, N.S., arriving there on the 3rd July. Here Mr. Fred. L. Jones, also Mr. Power, a preventive officer, joined us on our arrival when we proceeded at once along the Nova Scotia coast to the westward. On the 4th, 5th and 6th July we cruised amongst the islands and harbours between Salmon River and Canso on the look out for a small French schooner reported to be trading with contraband spirits along the above named part of the coast.

We did not meet in with any such vessel, at the same time have reason to believe that a small craft from St. Pierre Miquelon had been in that vicinity some days previous but had left before our arrival.

7th July we left Port Hawkesbury to resume our cruise along the north and south shores of the Gulf and River St. Lawrence.

The 18th and 19th we had the "Constance" hauled up on the beach alongside the Rimouski wharf to scrape the barnacles and grass from off the ship's bottom, and at the same time applied a light coat of red paint to same.

From the 20th July to 9th August we cruised along the north and south shores, around Anticosti and the Bay Chaleur.

10th August we met with you at Gaspé Basin where you held general inspection of ship and crew.

From the latter date to the end of the month our cruise was as before.

The 3rd to 17th September the "Constance" was on Messrs. Davie & Sons Patent Slip at Lévis, during which time the ship's bottom underwent a thorough scraping and painting, rudder unshipped and repaired ; an iron shoe riveted on stern ; iron shoe along keel in places refastened ; steering gear overhauled ; tail-shaft taken out and sent to machine shop for repairs, besides several minor jobs which were attended to.

20th September we left Quebec and proceeded down the gulf ; 27th received a telegram from Mr. Fred. L. Jones to proceed to Yarmouth, N.S., to cruise along the Nova Scotia coast, Bay of Fundy, and St. Mary's Bay, and to keep a sharp look out for the schooner "F. Richards" reported to have left St. Pierre Miquelon with contraband spirits. We boarded a large number of vessels, and on the 13th October were successful in intercepting the said schooner.

After such a long search, we, the officers and crew, felt much elated as this craft hove in sight, but our very great disappointment can better be imagined than described when after boarding and searching her to find her in ballast only. The general opinion on board the "Constance" was that if the "Richards" had left St. Pierre with contrabands on board she had successfully eluded us by discharging her cargo before reaching the vicinity of the Tusket Islands or St. Mary's Bay.

Thursday, 18th October, we left Yarmouth for the Gut of Canso with instructions to keep a sharp look out for the schooner "Petite Jeanne" bound through the Gut of Canso for Georgetown, P.E.I., with a cargo of contraband spirits. Early on the morning of the 20th we arrived at Port Hawkesbury where I received a telegram from Mr. Jones to proceed at once to North Sydney. At 11 p.m., same date, anchored at latter named place. Next morning (21st October) we were again doomed to disappointment by finding the "Petite Jeanne" moored to the wharf, seized, and cargo discharged, having fallen a victim to one of the cruisers on the Cape Breton coast a short time before our arrival.

After cruising in the vicinity of Sydney and Scattari for a couple of days we left on the 24th for the western portion of the Gulf and River St. Lawrence to resume our cruise in those waters.

From the latter date to the end of the season our cruise was principally along the Gaspé coast and the north shore.

On the 25th November the "Constance" was placed in Indian Cove, Lévis, for the winter and all hands paid off on the 30th of the same month.

I beg further to report that on the 25th May last I boarded two boats off Miscou, N.B., returning from their lobster traps and found in them some 500 lobsters ranging between four and eight inches in length. I at once seized and threw them overboard. A full report of the same was at once sent to Prof. Edward E. Prince, Commissioner of Fisheries.

During the past season the weather experienced was most unsettled, and on account of the unusual amount of fog which lasted well into the autumn, and the gales and snow storms of October and November proved anything but favourable to our cruising along the coasts.

Monday, 14th November, we experienced a strong N.E. snow storm, which was followed next day by a very severe cold snap. The mercury falling to 5 degrees on board, 6 below zero at Godbout, and 10 degrees below at Seven Islands.

In conclusion, we boarded 133 vessels and covered some 16,200 nautical miles.

This mileage which is nearly 3,000 less than 1897 was caused by leaving port much later in the spring, and some three weeks lost during the repairs at Lévis.

I have the honour to be, sir,
Your obedient servant,
GEO. M. MAY,
Commanding "Constance."

OWEN SOUND, December 28th, 1898.

Captain O. G. V. SPAIN, R.N.,
Commanding Fisheries Protection Service of Canada,
Ottawa.

SIR,—I have the honour to submit my annual report in brief of the work performed by the "Dolphin" during the season of 1898.

According to instructions, the "Dolphin" was placed in commission on the 23rd of April. Cruising towards Christian Islands, thence along north shore through Shawanaga Channel, and on the 28th of April I made seizure of one seine, which had been operated in Shawanaga Bay. After making thorough search in this vicinity, I continued patrol to French River, where I sold the two boats seized by Officer Boran.

On the 6th of May, I seized a seine in the vicinity of Grandine Point.

On the 7th of May, I seized another seine at the entrance to Collin's Inlet Channel. On the 10th of May, I came to anchor at the head of McGregor's Bay and took small boat in company with Overseer Elliott, and after proceeding about fifteen miles among the islands we visited the pickerel creek and found a large quantity of pickerel penned up, which we liberated. We arrested two men, who were camped near, for the offence. On returning to the steamer, and the charge being read over to the prisoners, they pleaded guilty and were fined $20 each.

We hove up anchor, proceeded to Birch Island, took small boats and visited a house on the La Cloche peninsula, where we found in the cellar a quantity of pickerel packed in ice, which we confiscated.

Continued patrol in this vicinity for some time, not finding any more trace of illegal fishing. Returned towards French River on 13th of May, and on the 14th, while patrolling between French and Key Rivers in small boats, we seized one boat and seine and arrested the three men and despatched them to French River in charge of a man. We continued search and when in channel known as east branch of Pickerel River, we lifted and destroyed five trap-nets, liberated the fish and returned to French River.

On the 16th of May, held court here and convicted the men arrested on the 14th and fined them $20 each.

On the 17th of May, destroyed one trap-net which had been seized by keeper of Jones Island light. On the 18th May, I lifted and destroyed two trap-nets, which were set between Campbell's Rock and Rosa Island. On the 20th May, lifted and destroyed another trap-net in the vicinity of Sturgeon Point. When grappling at Giant's Tomb on the 21st of May, I lifted and destroyed six very large trap-nets. Returned to Owen Sound on the 25th and shipped the seized seines to Ottawa.

Upon receiving orders from the department to assist the lightkeeper to make necessary repairs to fog bell on the Flower Pot Island, I visited and made repairs on the 27th May. I then patrolled and visited fish stations on the west side of Georgian Bay, receiving applications for licenses from a number of Indians and others.

On the 3rd of June I delivered to Overseer Elliott a row-boat, which I received from steamer "Bayfield," with instruction to deliver to him. When patrolling through Badgeley Channel on the 10th June we sighted a boat seining, and upon our approach they made for the bush, leaving seine and boat, which I confiscated and made search for the offenders, but was unable to find them.

On the 13th of June, met Overseer Elliott, and proceeded to Spanish River to investigate and report upon grievances of fishermen, forwarded to me from the department. We visited the several pound nets of Lapointe and Glanville, then proceeded to Sault Ste. Marie, checking over nets in the North Channel, arriving at the Sault on the 15th June, returning on the 17th. On the 20th at Little Current took on board seine seized by Overseer Elliott's men. Continued cruise along north shore, and on the 22nd June I grappled around Giant's Tomb and vicinity; was successful in finding and destroying eight large trap-nets. Again, on the 23rd, we lifted one more trap-net set on the shoals to the north of the island.

On the 24th, was interviewed by Inspector Sheppard in Midland. Upon arriving in Owen Sound on the 25th, I stored seines which I had seized and collected.

On the 28th, Mr. W. H. Noble, of Marine Department, joined ship to visit light stations on Cabot's Head, Flower Pot and Cove Islands, and returned to Owen Sound on the 29th. After coaling, I patrolled towards Meaford, interviewing fishermen and checking over licenses, and thence to Christian Island, where I lifted one trap and one fyke-net, and destroyed them by fire.

On the 7th of July, when cruising in the vicinity of Sandy Island, we lifted five trap-nets, which I destroyed. Continuing cruise up the north shore, visiting the fishing grounds, not finding any further trace of illegal fishing. Visiting Rattlesnake Harbour, I found a number of Indians fishing without license. I allowed them to continue fishing on paying fee and applying for license.

I then cruised towards South and Thomas Bays on the south side of Manitoulin Island, returning on the 16th July, I found one trap-net set off Cape Smith, which I lifted and destroyed by fire.

On the 22nd, when patrolling near Limestone Islands, I sighted a sail-boat making away from North Limestone Island, which I signalled with whistle of steamer, which they did not pay any attention to. I then fired a shot with rifle across their bows, which soon brought them to. I searched their boat but could not get anything to prove their guilt, although their boat was covered with tar. I released them and made search by grappling and found two large trap-nets set in water, which I lifted and destroyed. I then continued cruise easterly towards Midland. On the 26th July, I found, by grappling, two trap-nets set in water on the south side of Christian Island.

On the 27th, I sighted a sail-boat approaching the vicinity where I had lifted the nets the day previous. I took small boat and lay in wait for them, watching them search for the nets. I made towards them, and upon them noticing my approach they deserted the boat and made for the bush. I confiscated boat and returned to the steamer, where the owners of the boat came a short time afterwards and pleaded guilty to the offence and I fined them $10 each and released their boat.

Cruising towards Owen Sound for provisions and coal, where I received hammer shaft, with instructions to deliver it to Flower Pot Island. After delivering the shaft, I proceeded to Sault Ste. Marie, and took Overseer Elliott over his Lake Superior division, passing up through Canadian canal on the 9th of August, checking over license and visiting pound-nets, also visiting the important rivers in search of Americans, supposed to be fishing without permits.

After making a thorough patrol of this division, we found everything in good order, and the fishermen doing very fair fishing. We returned, arriving at and locking down through the Canadian canal on the 17th August. After coaling, I returned by north channel to Georgian Bay, where I continued patrolling, not finding any trace of illegal fishing until the 29th of August, when I came upon two men mending trap-nets on Christian Island and preparing to fish them. I arrested them and fined them $20 each, releasing their boat, subject to the approval of department, which they did, upon recommendation.

On the 5th of September I found one trap-net set in water in the vicinity of Cape Hurd. On the 10th of September I found, by grappling, two trap-nets in the vicinity of Partridge Island; also, one more on the same day in Smith's Bay, which I destroyed.

On the 13th of September, I found five trap-nets, by grappling, in Bad River; some of these nets were very large. Returning again on the 1st of October to Bad River, I was successful in finding five more nets, which I also destroyed. While in Tobermory on the 6th of October, I found that some of the fishermen had shifted from another division to there, and upon checking over licenses, they applied for license, which was forwarded to department and license was granted. Should the department see fit to enforce the numbering of boats it would greatly assist in detecting strange boats on any of the divisions.

On the 13th of October I found a skiff fishing off Thornbury, without license, and took the owner in custody and fined him $10 and allowed him the use of boat, subject to the approval of the department, which was afterwards released, and the fisherman applied for and received a license.

When in Sturgeon Bay, on the 20th of October, I lifted and destroyed three trap-nets, and also confiscated two hoop-nets for being fished without license.

On the 18th of November, found one trap-net set off Snake Island, which I destroyed by fire. While cruising in Borrow Bay on the 24th of November, lifted one piece of trout net and seized some fish which were recently caught out of season.

On the 25th November, lifted three pieces of trout net, which were set in water in the vicinity of White Cloud Island and having a few trout in them, and on my arrival in Owen Sound I gave fish away to the poor On the 29th of November I received a trap-net from light-keeper at Hope Island, which was seized by ex-light-keeper during the season of 1897, and on my arrival in Owen Sound I stored the same.

During the month of October, I found that the fish were much more plentiful than they have been for any time during my experience in the service, and have been requested by some of the fishermen to state that, in their opinion, it is owing to the fact of the strict patrol of the service.

I found that, owing to the very rough fall, the fishermen suffered very heavy from loss of nets.

During the month of November, I made several voyages around the Georgian Bay and part of Lake Huron, and found very little attempt on the part of fishermen to poach during the close season ; the majority of them are more inclined to assist in the protection.

The whitefish I found to be increasing, especially on the north shore between Killarney and Western Islands.

During my season's patrol, the several overseers have been taken over their divisions whenever desiring to go.

I arrived in Owen Sound on the 3rd of December, and received your instructions to pay off on the 5th of December, which was done, and the boat placed in winter quarters.

I have the honour to be, sir, your obedient servant,

GEO. W. PEARSON,
Commanding "Dolphin."

The whole most respectfully submitted.

O. G. V. SPAIN,
Commanding Fisheries Protection Service of Canada.

ANNEX A.

DETAILED REPORT OF THE FISHERIES INTELLIGENCE BUREAU.

HALIFAX, 31st December, 1898.

Commander O. G. V. SPAIN, R.N.,
Commanding Fisheries Protection Service of Canada.

SIR,—I have the honour to submit the annual report of the Fisheries Intelligence Bureau for the season of 1898.

In connection with the bureau during the past year, the stations comprised the following, viz. :—Fifty-three reporting and twenty-four bulletin stations. The two following stations were abolished, viz., Bayfield, N.S., and Beaver Harbour, N.B., as no telegraphic communication existed. Two new reporting stations were established, as follows :— Clark's Harbour, in charge of J. Lewis Nickerson, and Wood's Harbour, in charge of W. Luther Crowell.

An application was received from residents of Fox Bay, Gaspé County, P.Q., requesting that a reporting station be established in their locality, but, owing to various reasons, was not authorized by you.

The following is a summary received from the various stations showing the results of fishing operations for the season of 1898 :—

NOVA SCOTIA.

CLARK'S HARBOUR.

Codfish.—This station was established on June 11th, and the first report, on the 14th, indicated fair codfishing. After this they became more plentiful, but as bait was scarce, the catches were consequently light throughout that month. About August 15th, clam bait was used, which enabled those engaged to obtain very fair results. During the remainder of the season, whenever bait could be obtained, good catches were reported. Total catch for season estimated at 1,800 quintals.

Haddock were first reported on June 16th, in fair quantities, but during the remainder of the season, catches were light and somewhat irregular. None were taken on trawls. The aggregate catch is estimated at 300 quintals.

Halibut were first reported on June 30th, but the catches throughout the season varied from fair to poor, and were very irregular.

Herring were first taken on July 2nd, in small quantities, but after a few days they disappeared and were not again reported until August 4th, from which date light catches were made each day until the 15th. Throughout latter part of August and September the catches were light but regular, and on October 1st they began to gradually decrease, with the result that the amount secured was small.

Lobsters were first taken on January 1st, and the catches were fair until March 1st, when an improvement was noticeable, and good fishing was found until the close season set in. The number of crates of live lobsters shipped from Cape Sable Island during the season was 6,000. The total pack of the Cape Sable Packing Company's three factories is estimated at 4,800 cases.

Mackerel were first taken on May 17th, but the catch was small. The traps secured, during the season, about 180 iced barrels.

DIGBY.

Codfish.—Throughout April the weather was very rough and interfered greatly with fishing. The majority of the fleet were fishing for halibut off Yarmouth, and selling them there. From May 4th until the end of the season the catches of cod were light, but were irregular after May. In the early part of the season bait was very scarce about this district, and supplies for large hook fishing had to be purchased in St. John and on north shore. The total season's catch in this district, which embraces the whole section from Digby to Brier Island, is estimated at 320,000 lbs., which is valued at $11,200.

Haddock fishing commenced on May 4th, and the catches were light but regular until June 6th, from which time the catches were fairly good until the season closed, although a little irregular during the last two months. Total catch for the whole district is estimated at 1,135,000 lbs., and valued at $22,700.

Hake did not appear the past season until about May 28th, when light catches were made each day until June 6th, and two vessels, which had been prosecuting the halibut fishery fitted out for this branch. On June 7th the catches improved and fair fishing was reported until August 7th, from which date good catches were regularly made until the season closed. The total season's catch is estimated at 2,148,000 lbs., and valued at $37,590.

Halibut were taken in light quantities quite regularly from May 11th to 27th, and with the exception of some light catches during the latter part of June, they were not afterwards reported. Total catch estimated at 7,200 lbs., valued at $360.

Herring were first reported on May 18th, when the weirs at Little Joggin, Digby Harbour, took 25 barrels mediums. From that date until about July 29th, the catches varied from fair to poor, but were very fair afterwards, until about August 22nd, when they again were reported scarce. During the whole season they were very irregular, but are reported to have visited Digby Basin more freely than they did last year. This is attributable, it is thought, to fewer lobster traps having been set near the Gut. The fish were, however, very small, and the catch is said to have been 45 barrels, valued at $180.

Lobsters were first reported on May 3rd, and the catches throughout the season were light. The only reason that a normal catch is made is by the enormous quantity of traps set over a large district, and twenty men doing the work of one formerly. It is noticeable that the catch is falling off each year, particularly at this port, for while in 1890 this port alone had a total catch of 1,642 barrels, valued at $5,655, this year the catch will not exceed 333 barrels, valued at $3,966. Total catch for this whole district is estimated at 1,076 barrels, valued at $10,226.

Mackerel were first taken in Joggin weir on May 21st, but very few were taken during the season. The first catch in St. Mary's Bay was reported on August 4th, and on October 8th, a considerable quantity was reported in bay.

On the whole the past season has been a fairly profitable one for the fishermen, taking all drawbacks into consideration. The fresh fish business is developing rapidly, allowing quick sales from vessels and speedier return to fishing grounds. Scarcity of bait has been the great drawback the past season.

EAST PUBNICO.

Codfish were first reported on May 14th, but the catches were light until the 29th, when they became more plentiful, and very fair, regular fishing was reported until about July 3rd. From this date until about August 22nd, the catches varied from good to fair, but bait was very scarce and did much to lessen the catches. During the remainder of the season this fishery was poor, owing largely to the continued scarcity of bait. In the latter part of July, catches varying from good to fair were made at Mud Island.

Haddock fishery throughout May was light, but from June 1st to end of July the catches varied from good to fair, after which they were poor, owing largely to the scarcity of bait.

Herring were first reported on July 23rd, but the catch was light, although some fair hauls were reported at Mud Island. Very few were taken in August, the best catch having been made on the 17th, when boats varied from 1 to 3 barrels. Fair but irregular catches were made during the first two weeks of September, but afterwards they became light, although more regular, until about October 6th, when they were getting more plentiful. It is estimated that the total catch has been a poor one.

Lobsters were first reported on May 4th, in fair quantities, which lasted until about the 14th, when they became scarcer, and remained so until the 23rd, from which date the fishery was again fair until the end of the month. Throughout June the catches were regular, but light, and none were reported afterwards. Season's total catch considered a little below the average.

Mackerel.—The first catch of the season was reported at John's Island on May 14th, when one barrel was taken. The catches continued light until about the 23rd, when they commenced to improve and traps had 60 barrels mackerel, and boats varied from 150 to 200 fish. This continued until about May 31st, from which date they were scarce until June 18th. With the exception of a catch by trap of five barrels small mackerel on September 19th, at Abbott's Harbour, none were reported at this station the rest of the season.

ISAAC'S HARBOUR.

Codfish were first reported on June 7th, the catches having varied from fair to poor during the remainder of that month. None were reported during the summer months, but the catch since September 1st has been very light owing principally to scarcity of herring and squid on the grounds. Fishermen were compelled to dig clams for bait.

Haddock were taken in light catches until November 1st, since which time it is reported that the Drum Head (fishing place about three miles east of here) fishermen have been doing very well, catching this fish on clam bait for the "Finnan Haddie" factory which is owned and operated by Messrs. S. R. Giffin & Sons. This fishery, it is expected, will be continued until about December 1st.

Halibut have been scarce, and the catch will not exceed 100, which were sold to packers, who can them.

Herring were scarce the whole season, and the July catch did not exceed 50 barrels. Throughout August and September, about 500 barrels were taken in each month, which embraces the section between New Harbour and Beckerton, nine miles west of here. The falling off of this fish, as well as mackerel, is attributed to the filth in the water during the lobster season. It is reported that so much decomposed bait is put in lobster traps that at times the waters for miles around is covered with putrid matter. Before the lobster fishery was prosecuted as it is to-day, say ten or fifteen years ago, the net fishermen always made large catches of herring and mackerel during the spring months, and to-day they can scarcely get sufficient for bait.

Lobsters, although not reported to the Bureau until May 7th, are said to have been very fair during the months of April and May. The catches throughout June were light and towards the latter part of the month the gear was considerably broken by the heavy weather.

Mackerel were taken about the same time as last season, June 7th, and the total catch is reported to have been 15 barrels.

Salmon were scarce, and very few were taken.

Squid, although not reported, are said to have been very scarce throughout the season.

LIVERPOOL.

Alewives were taken in light and irregular catches, from May 12th to 31st, inclusive, and the season's catch is reported to have been almost a total failure.

Codfish, although reported on May 13th to have been in good quantities 15 miles off shore, were not taken inshore until the 17th, from which date the catches varied from fair to poor, until the last of the month, while the offshore fishing continued good. From June 1st to August 19th, the average catch was very fair, although bait was very scarce, and dogfish troublesome ; and good fishing was reported on offshore grounds and Grand Bank, but were rather scarce on Quero Bank. During the latter part of August the catches were light, owing to scarcity of bait, but throughout September and first part of October some very good catches were reported, but fish and bait were scarce on west end La Have Bank and Quero Bank about the middle of September.

During the early part of the season fishermen devoted their whole time to the lobster fishery, and consequently when the season closed, cod was found fairly plentiful, but bait could not be obtained. However, the inshore catch is considered a fair average, while the small crafts on offshore grounds were below the average. It is reported that only one banker went from this port the past season, and only landed 1,150 quintals in two trips, which is considered below half a fare. As the weather was bad it is said that quite a lot of fish will lay over until spring, as they could not be dried for market.

Dogfish were numerous at times and found very destructive to nets, and impeded all branches of fishing.

Haddock were first reported on May 26th, and the catches varied from fair to poor until the last of August, but were very irregular. During the early part of September very fair fishing was reported, but during the remainder of the season again varied from fair to poor. The season's catch is considered small.

Halibut.—Only few taken during the season.

Herring, although reported schooling in large quantities six miles off shore on May 17th, were not taken until June 7th, when a few light catches were reported. Small herring were reported schooling on June 29th, and on the following day light catches were reported, which continued until July 12th. On August 14th they were reported striking in, and boats were taking 100 fish. Light hauls were occasionally made during the remainder of the month, but on September 1st some boats were reported with two barrels, and the average catch throughout that month was fair. It is estimated that the total catch will not exceed 250 barrels, which is reported to have been the smallest catch for some years past.

Lobsters were first reported on May 12th, and the catches during the remainder of that month varied from good to fair. In the first week of June, bad weather impeded fishing, and it was reported on June 4th that a large number of traps had been damaged, and during the remainder of the month the average was fair. It is reported that the season's catch has been a good average, there having been fully as many canned as in former years. In addition to this it is reported that 135,000 large lobsters were sold alive to American smacks and taken to the markets of Boston and Portland.

Mackerel.—On May 19th, it was reported that 12 barrels had been taken off here by American seiners, and on the 26th were schooling in the harbour, but no catches were made by inshore boats until June 7th, when few light hauls of large fish were made for a few days. They were again schooling on June 8th and 27th, but only a few mediums were taken. During the first week of July, boats varied from 20 to 50 large fish, taken in nets, but nothing was reported the remainder of the month. On August 13th, six large fish were reported to have been taken, and on the 17th, nine barrels were taken by trap.

On the 19th they were schooling and one boat had 60 fish in net. Very few were afterwards reported, although they were schooling outside on September 29th.

Salmon were reported in light quantities on May 13th, after which they somewhat improved, and fair but intermittent catches were made.

Squid appeared on July 4th, but are reported to have been very scarce this season.

LOCKEPORT.

Alewives were taken in small quantities during the second week of May.

Codfish were reported in fair quantities on May 3rd on offshore grounds, but only part of fleet was out. About the 7th, light catches were made inshore, which continued until the 13th, when they began to improve. About this time the offshore catches became lighter, but fish were of good size. During the remainder of the month the fishery was, on an average, good, and best boat was reported with 84 tubs. In the early part of June the weather was stormy, but boats on banks did fairly well, and the best boat was reported with 125 quintals, the result of a three weeks' trip. On the 13th, fair fishing was reported offshore, and bankers were on their homeward trip with full fares ; but dogfish having made their appearance, drove all the bait fish off the grounds and, although cod remained in good supply, the catches were light, owing to the scarcity of bait, until about August 13th. On this date, herring were reported at Western Head, and supplies were obtained which did much towards the success of the banking fleet, which was reported to have been doing well. From about September 13th, until the close of the season, cod of good quality were reported ; but the catches were light, owing to scarcity of bait. As far as reported, the total season's catch is about 1,201,835 pounds, less than that of 1897. In addition to this catch, however, it is reported that 274 casks, or 12,330 gallons cod oil were extracted, which is also a shortage on last season's yield.

Clams.—During the past season, 1,353 barrels were taken for bait, which is 223 barrels in excess of 1897.

Haddock were not regularly reported, but good catches were made about September 22nd, and regular but light catches in the early part of October. Total season's catch, as per statement, shows a decrease of 18,457 pounds, in comparison with 1897.

Hake were not reported, but the total catch, as per statement, shows, in comparison with 1897, a decrease of 7,978 pounds.

Halibut were first reported on May 16th, and good catches were made daily until about the 27th, when they became scarce. Total season's catch estimated at 3,000 pounds.

Herring were first reported in small quantities on grounds on May 16th, and although they became plentiful after that date, they did not strike inshore until the 30th. Very few appear to have been taken, and they were not afterwards reported until August 13th, when eight barrels were taken at Western Head, and although large schools were reported offshore on the 16th, the catches remained light during the remainder of the month. In the latter part of September light catches were reported at Western Head and Green Harbour, but became plentiful at latter place on October 1st, and some excellent hauls were made. The season's catch, however, is very disappointing, and is estimated at 200 barrels, or 40,000 pounds. This is a very large decrease, in comparison with that of 1897, and previous years.

Lobsters were first reported on May 3rd, when 4,000 were taken, and continued in fair quantities until the 7th, when they fell off, and remained so until the 13th, from which date good catches, averaging about 6,000 lobsters per factory per day, were reported until the end of the month. During the first week of June, stormy weather prevented fishing, but the catches were afterwards fairly good until the 16th, from which date they were light until fishing closed.

Number of live lobsters taken for export........................	61,500
Number of live lobsters canned.....................1,300 cases, or	62,400 lbs.

In comparison with last season there is a large shortage in the number exported, but a greater quantity has been canned, which goes to show that they ran small.

Mackerel were first reported on May 31st, when 28 fish were taken at Western Head. Light catches continued at irregular intervals throughout the season at this place, but were not reported after September 1st. Total catch estimated at 12 barrels, or 2,400 pounds, which is an increase over that of 1897.

Catch of Fish at Lockeport Station for 1898.

Total quantities of fish by 5 bankers	2,433,500 lbs.
Total quantities of fish by 14 offshore boats	470,900 lbs.
Boats from Port Hebert to Blue Island	260,000 lbs.
Total	3,164,400 lbs.
Proportion of cod	3,090,037 lbs.
Proportion of haddock	47,466 lbs.
Proportion of hake	23,733 lbs.
Proportion of pollock	3,164 lbs.
Total	3,164,400 lbs.

LUNENBURG.

Codfish, although in good quantities on shore soundings on May 4th, were not reported to have been taken until May 23d, and the catches until the 31st were good. No fishing was reported during the first nine days of June, but on the 10th they were found in fair quantities, which continued until July 4th, when, for a week, good catches were reported. After this, they began to slacken off gradually, and after July 30th all branches were reported dull, owing to the scarcity of bait, and interference of dogfish; and the shore catch is said to have been the poorest for years. Fishing for the season on Western Banks, Sable Island, Middle Bank, Quero Bank and North Bay was very good; shore soundings good in May and June. Grand Banks fair owing to the great scarcity of bait at Newfoundland, while the Labrador catch was a failure.

On the whole, the total season's bank catch was a good average. Appended are lists of the banking fleets of this district, together with their respective catches.

Dogfish are getting more plentiful each year, and it is the opinion of fishermen of this district that unless the Government grant a bounty to catch them they will have the net and codfishing all destroyed.

Haddock were taken in good quantities from June 10th to 21st, but during the following ten days were scarce. From July 2nd to 17th the catches varied from good to fair, but were again scarce during the remainder of that month. The great scarcity of bait had much to do with the season's catch, which is considered the poorest for years.

Herring were reported schooling off Cross Island on May 20th, and boats averaged about three barrels. During the remainder of that month the catches varied from fair to poor. They were not afterwards taken until about August 19th, when boats averaged one barrel, but the total catch is considered the poorest ever known.

Lobster fishing commenced January 1st, and the catches until May 14th were poor, owing to bad weather and scarcity of bait. During these months, nearly the total catch was exported alive to the United States. The catch from May 15th until the end of June, when fishing closed for the season, was fair; making an average catch for the season. As good prices were paid by shippers and packers, the fishermen have been better remunerated than in 1897.

Mackerel were first reported on May 18th, when one boat had 12 large fish. About the 31st, one boat had six barrels, but very few were reported throughout June, although schooling on the 8th and 24th off Cross Island, until the 28th, when 22 barrels were taken with seines. Very few were taken during the remainder of the season, and the total catch is considered very poor.

Squid, although not reported, are said to have been scarce inshore, and very few were taken on the banks. Bankers, however, obtained supplies at Canso, where they are reported to have been plentiful.

LUNENBURG BANKING FLEET.

	Lbs.		Lbs.
Gladys B. Smith	460,000	Bona Fider	300,000
Yonatan	335,000	Melrose	275,000
Laura M. Ernst	180,000	Blenheim	320,000
Viking	330,000	Bonanza	300,000
Luetta	460,000	J. C. Schwartz	300,000
Minnie J. Smith	400,000	Areuna	340,000
Secret	345,000	La France	295,000
Samoa	325,000	Westeria	300,000
Atlanta	320,000	Harry Smith	200,000
Werra	270,000	Malabar	240,000
J. H. Ernst	340,000	Erminie	245,000
Maggie M. W.	300,000	Basil M. Gilbert	360,000
Urania	315,000	Ashton	370,000
Milo	300,000	Galatea	400,000
B. C. Anderson	285,000	Mussid	300,000
Arrostook	150,000	Perdona	310,000
Gladys May	360,000	J. W. Young	310,000
Howard Young	440,000	Moliza	415,000
Elbro	380,000	St. Clair	345,000
Alalla	100,000	Dora	320,000
T. W. Langille	140,000	Ontario	350,000
Clara E. Mason	340,000	Robert F. Mason	285,000
Tyler	220,000	Britannia	315,000
Dictator	360,000	O. P. Silver	340,000
Clarance Smith	480,000	Crescent	320,000
St. Helena	410,000	Glad Tidings	400,000
J. A. Silver	290,000	Columbia	320,000
Leader	200,000	Panama	410,000
Nonpareil	220,000	Gleaner	315,000
Argosy	365,000		

LUNENBURG LABRADOR FLEET.

Jennie May	95,000	Nicanor	100,000
Sadie	60,000	Monark	40,000

LUNENBURG NORTH BAY FLEET.

Pandora	200,000	Rapture	160,000
Maggie E. Z.	240,000		

MUSQUODOBOIT HARBOUR.

Alewives were first reported on May 23rd, but the season's catch has been almost a total failure. At no place between Dartmouth and Tangier did they seem to strike in. As the previous year was an off year, it was thought they would be more plentiful this season, and no reason can be assigned for the light catch, as Chezzetcook River, Lake Porter River, Petpeswick River, and other places, are free from mill dams, and there is neither saw-dust nor poaching to drive them out.

Codfish were first reported on May 27th, but the catches were very light until about June 9th, when bad weather set in and very few were taken during the remainder of that month. On July 5th, they were reported more plentiful, and fair catches were made each day until the last of the month. Throughout August the catches were again light, as the weather was bad and fog prevailed so that boats were unable to go out during he first week. From August 1st to 10th, cod were reported in good quantities wide offshore. From September 1st to 17th inclusive, the catches were fair and regular, notwithstanding that bait was very scarce, but heavy winds prevented fishing during the remainder of that month. In October very few were reported. On the whole, the season's catch is slightly in advance of last year; but fishermen have to go a long distance offshore, where they appeared fairly plentiful the entire season. Very little was done inshore. The vessels which went to North Bay did well, all returning loaded.

Haddock appeared this season on July 8th, and the catches, as in past years, were fairly plentiful. This branch, too, shows a slight increase.

Halibut were taken in light but regular catches from August 1st to September 17th, inclusive.

Herring struck in on May 26th, from which date until the season closed, the catches were very light. During the latter part of July some boats would only have one dozen fish, and the total catch, it is reported, will not amount to more than a few barrels.

Lobsters were fairly good throughout April, May and first half of June, although rough weather in May prevented a larger catch being made. In the second week of June a number of traps were destroyed by heavy weather; still, the whole catch is considered in excess of that of last year. It is estimated that about double the quantity of live lobsters was shipped to Boston than in former years, and fishermen realized good prices. This year great satisfaction is manifested over the protection that this branch is getting, and, as a result, it is reported that no illegal fishing is being carried on.

Mackerel were reported plentiful on May 24th, from three to four miles off shore, and on the following day were schooling at Jeddore. On the 26th they became very scarce, and continued so during the whole season. This branch is considered nearly a total failure.

Salmon and Trout were taken in light quantities throughout June and July, although a little more plentiful than last season. It is said that the catches of late years are not up to those of a few years ago.

PORT LA TOUR.

Alewives were reported to have been very late the past season, and the catches throughout the month of May were very light, not averaging over 20 per net per week.

Codfish were taken earlier the past season than in 1897, and the catches from May 5th to June 12th averaged about one quintal of good-sized fish per man. On June 13th they became more plentiful and boats would have done well if bait could have been obtained. About the 17th the average catch per man was three quintals, and the prospects were better than in any previous week, but fishermen lost much time securing bait. On the 25th the catches were again light, varying from one-half quintal to one quintal per man, until the last of August. Old fishermen claimed that the fish were on the ground but, with scarcity of bait and abundance of dogfish the catches must necessarily be small. On July 9th a school of squid appeared to have swept over the ground, but none were taken, and the catches were consequently so light that fishermen were making their own hay instead of hiring as in former years. About July 24th, a school of squid on ground enabled two men to catch eight quintals, which clearly proved that fish were plentiful. The catches throughout September were fair, as herring were commencing to strike in. On September 5th, fish and bait were reported plentiful on Blanche Ridges, and on the 8th, two miles east of Brazil Rock, but rather too wide off for small boats. Early in October the easterly winds drove fish offshore, and the catches until the 15th were light. Total season's catch to October 15th is estimated at 1,300 quintals, which is 300 quintals below that of 1897. A noticeable fact this season is the absence of large-sized fish, which seems to indicate that the usual school of cod which follows the herring bait has not been on the inshore ground.

Haddock were first reported on June 23rd, and, with the exception of a few fair catches during the third week of August, the season's catch was light, probably not exceeding 250 quintals.

Herring, although not taken inshore until August 2nd, were reported in good quantities at Cape Negro on June 30th, and schooling off same place on July 3rd, but no catches were made. From August 2nd until September 21st, the catches were light and in September very irregualr. On the 22nd the average catch per man was one-half barrel, which increased on the 24th to two barrels, while on the 27th they appeared to strike off and the catch was again one-half barrel per man until the last of the month.

From October 1st to 12th the catches varied from 30 to 50 fish per net, but this improved on the 13th, when best netter was reported with one barrel. As the outlay the past season for this fishery in nets, salt, barrels, &c., was heavy, the result to October 15th has been a great disappointment as the quantity for export will not exceed 100 barrels.

Lobsters, when first reported on opening of bureau were rather scarce, averaging about one lobster per trap and half small. This continued about the entire season, and the season's catch is considered about 20 per cent less than that of 1897. But as higher prices were paid for small lobsters during the last month of the season than is customary, the results have been very good, if not better, than in the previous year.

Pollock were almost a failure, not over 100 quintals having been taken.

Squid appeared to be very scarce the entire season, and but very few were reported. In the last week of July they were on the grounds and, as a result, good catches of other fish were obtained.

On the whole the general catch is a little below the average as the season to October 15th, has been one of the hardest experienced by fishermen for many years. There is yet time, however, to supplement the season's catch a great deal if the cod and herring strike in.

PORT MEDWAY.

Alewives were first reported on May 7th, but the total catch is reported much smaller than last season which was not considered an average catch. No large catches were made at any time, and the schools were small and erratic in their movements.

Codfish appeared in promising numbers in the early spring, but as no attention was given them until after the close of the lobster and salmon fisheries, it is reported that they had apparently deserted their usual grounds. This, coupled with the continued absence of all bait fish, has rendered the catch of this fish, for the past season, the lowest in the record of this port.

Haddock were first reported on June 7th, but were almost identical with cod, as far as catches were concerned.

Herring struck in on September 2nd, and some boats had two barrels. Throughout that month boats only obtained sufficient for bait and the catch is reported to have been a failure.

Lobsters were reported in fair quantities on May 1st, and the catches remained fairly good throughout that month. Very few were reported during the remainder of the season. It is reported that this industry has been quite remunerative the past season in consequence of the good prices which prevailed. The catch, however, was lighter than last season, owing chiefly to the rough weather and the loss of traps.

Mackerel were an unknown quantity at this port the past season.

Salmon, although fairly good throughout May, was regarded a light catch. Exporters report that the quantity handled was about half that of last season, which was not an average year.

It is reported that the cause of the failure of this fish, as well as alewives, is difficult to explain. Of the possible causes, saw-dust river obstructions must be eliminated, as they are reported to not exist on the Medway River; but the polluting of the water at the entrance of the harbour by lobster fishing, which is thought to prevent the fish returning to their old haunts, seems reasonable, and is the cause generally believed to be the existing and true one.

Shad.—The catch of this fish was in proportion to that of alewives and salmon, and did not figure prominently as being of great commercial value.

PORT MULGRAVE.

The past season has been an exceptionally hard one for fishermen, as fish of all kinds were very scarce, and the total catch is a failure. Fishermen with 30 nets have scarcely sufficient quantities for their own use. Of the two vessels in North Bay for mackerel, one returned with seven barrels, and the other without a single fish. During the first week of May and throughout June, lobsters were reported fairly good, but were of small size.

The catch of codfish has been very light, but no alewives or haddock have been reported. About June 27th, Captain McFarlane, of the schooner "Soudan," from Boston to this port reported having passed several large schools of mackerel between Brown's Bank and Cape Sable, but that no vessels were to be seen.

SALMON RIVER.

Alewives were taken in fair catches during the third week of May but not afterwards.

Codfish were not reported until about May 20th, when the catches were fairly good, and, although irregularly reported, appear to have been in fair quantities until about August 4th, when dogfish appeared plentifully, destroying bait and damaging nets. During this period bait was very scarce and weather rough, but throughout September the catches were reported to have been much better. It is reported that the plant now in operation is inadequate for the successful prosecution of this fishery, and that the boats which have fished since July 1st have averaged about 25 quintals.

Haddock were first reported on June 8th, and the catches, as far as reported, were identical with cod.

Herring.—The first report of this fish on July 5th indicated large schools off Beaver Light, but no catches were made until the 8th, and during the following few days light catches were reported. Nothing was afterwards reported until September, throughout which month fishermen had as high as 12 barrels per net. Total average per boat for season estimated at 20 barrels.

Lobsters were taken in light catches from May 7th to 27th, after which they varied from fair to poor, until the last of June. It is reported that the total quantity canned the past season was short of former years, but more were exported to the American markets ; and it is said that the size and quality was much better.

Mackerel were reported schooling off Beaver on May 28th, but no catches were made until about June 8th, when a few were taken in nets for a few days. They were not reported afterwards during the season

Squid were first taken on July 13th, and, as far as reported, but few were taken. None went into the bay the past season, and it is said that no vessels were baited.

SAND POINT.

Alewives were taken in light quantities each day from May 1st to June 11th, inclusive, and were used fresh by offshore shallops for bait.

Codfish were in fair supply during the first week of May, but as bad weather set in, boats were prevented from going out. About May 28th a fair run of cod was reported seven miles offshore. In the early part of June heavy easterly weather prevailed and the catches were light, but about the 10th they became fair, and remained so for ten days. As bait then became scarce and dogfish plentiful, the result was poor fishing until about October 7th. On the following day a fair school was reported inshore and boats had about 1½ quintals each day until the 15th. On the whole, the catch per small boats was very light, and will not exceed seven quintals per man. A fair supply of cod was on Eastern Ridge, off Lockeport, and on shore soundings, the whole season; but the catches were light, owing principally to the scarcity of herring bait, for fish refused to take clam bait. The total catch of offshore shallops is about 900 quintals. The Bank Quero fleet have done exceedingly well with hand line and salt clam bait, and the four vessels composing said fleet each landed two full trips. Total catch is 10,000 quintals, with 84 men.

Haddock were first reported in fair quantities on June 10th, and continued so until about the 20th, when the catches became light, owing no doubt to the scarcity of bait and remained so throughout the season. Towards the last of September, fair schools were reported inshore, but the catches did not increase any, as bait could not be obtained in sufficient quantities for trawling, which is an improvement on hand-lining. The season's catch is almost a total failure, and will not average over three quintals per man.

Hake and Halibut.—No hake were taken the past season, and but very few halibut.

Herring struck on May 22nd, but few were taken that month. Throughout June and July they were very scarce, and their absence was keenly felt, as bait could not be obtained. Early in the third week of August they appeared and the best boat obtained 80 per net, while on the day following the best boat had one barrel to six nets. Until about September 20th, the catches were small, but on the 21st the best boat was reported to have taken eight barrels at Shelburne Light, and fishermen thought that a fair school was on shore, but had sunk to spawn in deep water. As near as can be ascertained, 300 boats have taken about 200 barrels herring. Those taken in the early part of September were small sized, while in the latter part the school was very large and fat. It is estimated that the total catch of 600 nets will not exceed 250 barrels. As there were no vessels seeking bait the last catch was salted. It is said that unless more herring strike in, that fishermen will be sorely in want for their winter supplies.

Lobster fishery commenced about February 1st, but the catches were light throughout the month. During March the catch somewhat improved, but in April it was again poor, owing to bad weather. The catches during these months ran about half large size, and all were exported—the small lobsters in barrels to New York, which State has no limitation to size, and those 10½ inches or over to the Boston market. About May 1st this branch became fairly good and remained so until about June 19th, when they began to slacken off. After the middle of April those which were under 10½ inches were sent to the Lockeport factory. The average catch is considered below that of 1897, but as prices were about 60 per cent in advance of last season, the fishermen here netted fair proceeds.

Mackerel were not taken this season, as far as reported.

Salmon were first reported on May 17th, and the catches were light during the remainder of the month. In the first week of June some very fair catches were made, but from 8th to 25th they were again scarce and nothing was reported after latter date.

Squid neither appeared inshore nor offshore during the whole season.

On the whole the past season is considered the most trying, for the shore fishermen in this locality, for the past forty years.

SPRY BAY.

Codfish were first reported on May 26th, but the catches, with few exceptions, were light, owing, to a great extent, to unfavourable weather,. until the last of August. Throughout September the average catch was fair, but from October 1st to 12th the catch was again light. On October 13th and 14th very good fishing was reported. Total season's catch to October 21st is estimated at 400 quintals.

Haddock were very scarce the whole season, and the total catch will not probably exceed 50 quintals.

Herring were not reported the past season until May 28th, when the catches varied from fair to poor for about 10 days. Throughout September the average catch was fair, but very few were taken in October. The total catch is light and will not exceed 250 barrels, which was not supplemented at various adjoining harbours. During the season the prevalence of dogfish retarded this fishery to a great extent, as they damaged nets considerably.

Lobsters were first reported on May 2nd and, with the exception of some fair catches between the 20th and 27th May, the catches were light. It is estimated that the season's pack will be considerably short of the previous year.

Mackerel appeared on May 28th in light quantities, but none were taken in nets during the season. About 25 barrels were taken in September at Pope's Harbour.

WHITEHEAD.

Alewives were taken in light and rather irregular catches from May 17th until June 15th, and the total catch is estimated at 30 barrels.

Codfish were not reported until June 9th, owing no doubt to the bad weather and scarcity of bait. With the exception of some fair catches from August 29th to September 2nd, inclusive, the catches continued poor the whole season. Total season's catch estimated at 750 quintals, which is a shortage, in comparison with last season.

Haddock were reported the past season as early as May 11th, and the catches throughout the remainder of that month varied from fair to poor. During the rest of the season the catches were light. Total catch is estimated at 850 quintals.

Hake were only taken in light quantities during the last week of August and first week of September.

Herring struck on May 11th, but very few catches were made until the following month, when boats varied from one to three barrels and one trap had 30 barrels on June 15th. Throughout July and the greater part of August very few were taken, but on the 29th August they appeared in fair quantities and the catches, until the end of September, varied from fair to poor. Throughout October they were reported scarce. Total catch estimated at 450 barrels, which is an increase over last year's catch.

Lobsters were first reported on May 3rd, but the catches until June 30th were light. Total season's pack estimated at 2,400 cases, which shows a large falling off each year.

Mackerel were first taken on May 23rd, when boats varied from five to ten fish. On the following day 700 were taken by trap, but the catches did not improve, and were taken in light and irregular catches until end of July. Nothing afterwards. Total catch estimated at 75 barrels, which is a shortage, in comparison to that of 1897.

Pollock were not reported, but the season's catch is estimated at 100 quintals.

Squid, as far as reported, were only taken in light catches from August 16th to 27th.

YARMOUTH.

Alewives, when first reported, on May 2nd, were fairly good, but the catches until the 21st were small. Nothing afterwards.

Codfish.—On May 2nd, it was reported that local fishing was stopped by bad weather, but on the 4th boats varied from 10 to 50 cod and haddock, and the catches were, on an average, fair until June 27th, although somewhat irregular. During the second week of July, light but regular catches were reported; but, as great scarcity of bait prevailed, very little fishing was done inshore the remainder of the season. During the latter part of August fair fishing was reported by offshore vessels, but as fishermen appear unwilling to give any reliable information about their catches, and as very few are brought into this harbour, it is difficult to give any definite idea of the quantity taken. It is reported that most of the fish caught in vessels owned or fitted out in this port are carried to the outports, where the crews live, to be cured.

Haddock.—The catches, as usual, have almost been identical with cod, except in the early part of May, when the catch was slightly lighter.

Halibut were first reported on May 5th, and the catches were light during the following week, but afterwards were fair, although very irregular. It is reported that the spring catch was mostly taken by Digby vessels and brought here and exported to the United States. The Yarmouth Harbour boats are reported to have scarcely taken sufficient to supply the local market.

Herring were not reported until August 1st, when light catches were made for a few days. About September 6th, reports from northern part of county estimated the catches to vary from three barrels downwards. Fish of large size.

Lobsters were first reported on May 3rd, and with the exception of some light catches during the first week, were, on an average, fair until June 27th, although very irregular, from May 15th. It is estimated that there will be about 10 per cent per man decrease, on an average, although the gross catch may have been more, owing to the increased number of men and gear. During the past season the following quantities of live lobsters have been shipped to the United States from this port:—

No. of Crates of Live Lobsters:

1898.	Crates.	Value.
January	1,988	$ 22,749
February	1,191	16,117
March	3,666	43,336
April	2,992	25,260
May	2,181	17,601
June	1,352	12,932
July	91	974
	13,461	$138,969

As in past seasons, United States and local vessels smacked additional lots from the counties of Shelburne and Digby.

The following are the shipments of canned lobsters of 1898 pack :—

No. of Pounds of Canned Lobsters :

1898.	Pounds.	Value.
January	5,760	$ 1,085
February	33,824	6,410
March	24,000	4,590
April	204,889	28.647
May	227,620	34.180
June	207,748	35,644
July	114,470	20,759
September	750	135
	819,061	$131,450

Mackerel were first taken the past season on May 7th, when 25 large fish were reported in Iron Mine trap. During the following three days the catches were very small, owing, no doubt, more to the fault of boats than scarcity of fish. On May 10th the average of six traps was only 15 fish, owing to prevailing easterly winds, but during the following week varied from 1,000 to 40,000 fish. From May 18th to 25th six traps varied from 50 ice barrels, small, to 1,500 ice barrels, "mediums" to large.

On the 26th the average dropped to three barrels, and as bad weather set in and is reported that the spring catch was shipped fresh and the usual summer and fall schools did not appear.

Salmon and Shad were first reported on May 6th, but the catches were light during that month. From June 11th to 29th the catches of salmon varied from fair to poor, but no shad was reported after May 21st.

Trout were first reported on May 6th, and the catches, until the 21st, were light. It easterly winds and fog were adverse to fishing, all branches were very quiet. This weather lasted until about June 5th, after which the average for the four succeeding days varied from three to 250 ice barrels. After this, they began to get scarce, and the traps, during the remainder of the season, did not exceed three iced barrels per day. It is reported that if the exportation were strictly prohibited, good fishing would be very soon obtainable.

The following approximate quantities of fish taken at Tusket River, Salmon River and Eel Brook River may be of interest and value :—

The *Tusket River* fisheries would be about as follows :—

Salmon,	fresh,	9,000	lbs.,	mostly exported fresh.
Trout	„	6,000	„	„ „
Smelts	„	10,000	„	„ „
Frost fish	„	10,000	„	different ways.
Shad	„	50	bbls.	„
Eels	„	30	„	mostly exported fresh.
Alewives	„	2,000	„	about half salted, balance fresh bait.

The *Salmon River* fisheries—

Salmon,	fresh,	1,000	lbs.,	mostly exported.
Trout	„	400	„	one-half „
Smelts	„	1,200	„	„ „
Frost fish	„	12,000	„	for poor people.
Eels	„	25	bbls.	exported.
Alewives	„	350	„	mostly fresh bait.

Eel-Brook River fisheries—

Alewives,	fresh,	200	bbls.,	fresh bait.
Eels	„	125	„	half home use.
Trout	„	300	lbs.,	different ways.
Smelts	„	1,200	„	exported.
Hake	„	2,000	„	home consumption.

CAPE BRETON.

ARICHAT.

Alewives were not taken here this year, or in fact for some years past. These fish some years ago were abundant and were an important item of commerce; but the rivers and lakes have been so neglected, by those whose duty it is to look after them, that the alewives, owing to obstructions, cannot get into the lakes to spawn. When the brooks leading into the lakes and rivers were carefully looked after, not only alewives but salmon were much more plentiful than they are at present. Very little additional expense and more vigilance on the part of paid officials would remedy the state of things now existing ; and it is thought that in a short time alewives and salmon would be found more abundant on these shores.

Codfish made an appearance about May 14th, and whenever fishermen could obtain bait they made fair catches ; but owing to the continuance of wet weather they had great difficulty in curing them.

Haddock struck in about May 10th, and a good many were taken in the haddock nets now used by many of the fishermen. The catch, which was much larger than last year, would have been still greater had bait been obtainable.

Herring were first taken June 9th, and the catch was fairly good up to July 10th. They struck in again during the last week of August and good catches were made. Light catches were taken in September, but the catch was not general.

Lobster fishing commenced the latter part of April, but owing to the scarcity of this fish the only canning factory here closed on June 15th. There can be no doubt that year after year the lobsters are decreasing and are much smaller in size.

When it is considered that the fishermen annually destroy enormous quantities of spawn-bearing lobsters, no surprise can be felt that the lobster is becoming scarcer every year. If the present open season, up to July 15th, is continued, no matter under what restrictions or safeguards, it is believed that in eight or ten years, at the furthest, they will become extinct.

Mackerel made their appearance about May 25th, but very few were caught by the fishermen owing, no doubt, to the use of purse seines, which frighten and drive the fish from the coast. Up to November 9th no fall mackerel had been taken.

CHETICAMP.

Codfish were first reported on May 5th when two boats arrived with 1.000 pounds each of fine fish. From that date until about July 7th the catches were light, owing principally to unfavourable weather, but during the remainder of the month the catches were very good, boats on a few occasions averaging 1,000 pounds. Throughout July the average catch was very fair, although the weather was very uncertain and boats were compelled to come in early. From August 1st to 21st the fishing was good, but about the latter date, owing to the poor quality of bait and to the fact that more attention was given the mackerel fishery, the catches of this fish began to decline. During the remainder of the season the catches, with the exception of the first week of October when boats had 1,000 pounds, were light.

The total number of fishing boats in actual operation at this station, which comprises the adjoining districts, Cape Rouge, Pleasant Bay, Grand Etang and Friar's Head is about 200. Of that number 19 are over 10 tons, are registered and are stationed at Cheticamp ; while those at the other stations are of small dimensions, but notwithstanding they are of an extraordinary capacity and have sometimes ventured out and reached the fishing grounds frequented by large sized boats. It is reported that the total catch of this fish has been largely in excess of any other kind. A very important fact noticed the past season was the striking inshore of the food fishes to a greater extent than formerly. Often have boats been known to make a good day's fishing when anchored less than a quarter of a mile off shore. The real cause for this striking inshore is not known, but it is the general opinion that very small fish, which feed in shallow water and generally known as bait fish, serve as an allurement for the larger ones.

Dogfish made their appearance on August 1st. As usual they created confusion among shoals of other fishes. A large quantity has been captured, and it is reported that the fish are becoming so abundant that before many years they will reign supreme over all other kinds.

Haddock were first reported on May 25th, but the catches were light until about July 27th, when they became good and continued so until about August 22nd, from which date they were scarce.

Hake appeared also on May 25th, but were very scarce throughout the past season, although the average size is reported to have been very large.

Halibut were reported in very good quantities on May 26th, and as far as reported some very good catches have been made ; although it is the general opinion that they are becoming scarcer each year.

Herring, which had not struck these shores for the past eight or ten years, made their appearance on May 5th in light quantities. It is reported that they were very plentiful and of an exceptionally fine quality in May, and that fishermen took a reasonable supply ; but it is probable that if the weather had been more favourable they would have done a good deal better as the heavy storms prevented the raising of nets. Very few were reported during the remainder of the season.

It is claimed that the unusual long absence of this fish from our shores was due mainly to the action of the ice during the winter season. For a good many years past, owing to prevailing winds and uncertain ocean currents, ice is brought down from the north at a very early season, making an ice-bound coast for nearly three months of the year and preventing movements of fish from all quarters. This year a great change has been experienced. Ice has remained on this coast barely a month and during the interval moved to and fro in many detached portions, giving access for numerous schools to move to congenial grounds.

Lobsters were first reported on May 5th, when light catches were made for about a week. During the remainder of the month the catches varied from good to fair, but scarcity of bait and unfavourable weather prevailed and impeded fishing to a great extent. Bad weather continued throughout the first three weeks of June, causing much damage to lobster gear, and the catches were light. From June 21st to July 9th fairly good catches were reported, but were poor afterwards until the season closed.

Mackerel are said to have been schooling at the island a fortnight previous to the 30th July when they were first reported, but few were taken. They were again schooling at island and in Pleasant Bay during the first week of August, and afterwards took hooks freely when one boat had 90 fish. Light catches continued throughout the month until fair hauls were reported at Cape Rouge. Very few were reported during the remainder of the season and on October 14th appeared to have left the shores. The season's catch is considered poor and is said to be mainly due to the inferior bait used, as it is none other than the thin spring herring, caught around the shores of the Magdalenes, which is a species thought to be inferior to those which struck this part of the coast. It is reported, however, that the deficiency of the catch was counterbalanced by the extraordinary large size of the mackerel, as it was not a rare thing to see a mackerel with a width of 16 inches when opened.

Salmon were first reported in small numbers on May 30th, but from June 4th to 11th the catches here were very fair and of remarkable quality, while in Little River they were good and were plentiful at Friar's Head. During the remainder of the month good fishing was irregularly reported at Friar's Head and fair at Little River and Grand Etang.

Squid were first taken on July 12th, and the average catch until the end of August was good. During the remainder of the season they were scarce and irregular, although during the last week of September some excellent catches were reported. This fish which is most indispensable to the fishing industry is a great boon to fishermen as bait, as it actually takes the place of clams, which, if used throughout the summer, would incur heavy expenses.

It is estimated that the quantities of fish taken at Pleasant Bay, Cape Rouge and this station, are as follows :—

Codfish	4,900 qtls.
Mackerel	460 brls.
Herring	650 "
Salmon	5,000 lbs.

while the estimate of quantities taken at Grand Etang and Friar's Head will be about one-third of the previous mentioned quantities.

The following remarks relative to the lobster fishery have been received from our reporter at Cheticamp, C.B. :—

"If further continuance of the industry be allowed, a complete extermination of the fish will certainly be the result. In my opinion it is high time for our Government to adopt regulations for the entire cessation of the fishery for at least three years. From the pronounced failure of the fishery in general and also considering the large damage sustained by fishermen to their traps, it would convince me that, by the fair portion which has been as yet packed, there has been illegal fishing carried on to some extent; and that lobsters of the minimum size have been brought to the factories to be packed for exportation."

GABARUS.

Codfish were first reported on May 27th, and with few exceptions the catches were light until about June 23rd, when an improvement was reported and boats varied from one quintal to three and a half quintals until July 2nd. About this time bait became scarce and with the appearance of dogfish on the 13th handicapped the fishermen throughout that month. Squid having appeared on August 1st the catches improved, and although dogfish, scarcity of bait and bad weather were the chief hindrances to fishermen, the average catch until about September 17th was fairly good. During the remainder of the season the weather was very stormy and interfered greatly with the fishing. When fine enough for boats to get out some would have from 500 to 600 pounds, and on October 10th this fish was reported plentiful, but there was no chance to fish. The total catch is estimated at 1,400 quintals.

Haddock, which usually accompany codfish, are reported to have been scarce from May until about June 15th, when they somewhat improved and were fairly good until July 15th. Estimated season's catch 300 quintals.

Herring struck in on June 2nd, but the catches were light and continued so until August 1st, when a fine school of large fish appeared and boats had catches varying from 300 to 4,000 fish. On the 12th this school departed and the catches were afterwards poor. Season's catch estimated at 400 barrels, which is a large decrease in comparison with 1897.

Lobsters.—Although fishermen were ready on May 1st and waiting for the ice to get out of the bay, the first catch was not reported until May 9th. The catches were light until the 19th as the sea was very rough, but during the remainder of the month were fair. On May 20th it was reported that more lobsters were being taken here than on any other part of the coast. From June 1st until July 15th the catches were light, although some days fairly good ones were reported. On the whole the season was considered a very fair one and no bad storms occurred to damage gear.

Mackerel were first reported on May 25th, when a catch of 60 fish was made in deep water. On the following day the highest boat was reported with 17 barrels; but from May 27th to July 2nd the catches, as far as reported, were light. None worthy of mention were afterwards reported, and a noticeable fact is that no mackerel appeared in the bay the past season. Total season's catch estimated at 80 barrels, which is a decrease of 130 barrels in comparison with 1897.

Squid appeared plentiful during the first week of August, but none were reported afterwards.

HAWKESBURY.

Herring.—A large number of bankers were baited at Harbour au Bouche in the spring where they struck in in large quantities. The net fishing at Port Malcolm and Basin River Inhabitants was fairly good the latter part of July. The Magdalen fleet on their return from their second trip had good fares of herring which they disposed of at prices varying from $4.00 to $5.00 per barrel. The season taken as a whole is considered by the fishermen to have been far below the average.

Lobsters.—The lobster fishermen of the Strait of Canso did fairly well this season and realized good prices for their catch. At Port Malcolm and Creignish the fishing was poor, and, therefore, very discouraging to the fishermen of these localities. It is reported that some thousands of crates of live lobsters were shipped to Boston the past season from this port per SS. "Halifax." This is becoming an important branch of the fishing industry, its volume increasing each year.

Mackerel.—The Magdalen fleet which left here in May, returned with paying trips of spring mackerel, their fares having ranged from 40 barrels to 150 barrels. The shore fishermen experienced the worst season for many years as their mackerel fishery was a complete failure.

INGONISH.

Codfish were first reported this season on May 12th, when boats averaged two cwt., but the catches throughout the season were light. It is reported that not over quarter of the fishermen were engaged in this branch the past season until the lobster season closed. The prices which ruled very low in the early part of the season improved after August and compensated the early shortage.

Haddock were first taken in good catches on trawls in shoal water on May 25th, and continued good until about June 6th, when they commenced to decline and no catches were reported after June 26th. Those who prosecuted this branch did well and supplemented their other catches.

Herring struck in on May 16th in small quantities and the catches remained light the whole season. It is reported that the July run has not struck in for several years past.

Lobsters.—In this section the fishermen, owing to the low price and scarcity of codfish, chiefly fitted out for this fishery, which season commenced about May 14th. Lobsters seemed fairly plentiful during the first month, but gradually became scarce toward the latter part of June, but a week previous to the close of the season they became more plentiful. On the whole the season was a fair one and being a smooth summer packers saved all their traps and gear. It is contended that the shore is over-fished and consequently the fishermen earn less on account of the catch being divided; so many more being at it.

Mackerel appeared first on May 27th, but in such small quantities that the spring catch was a failure. The summer net fishing proved better and those who engaged in it were fairly well rewarded. Nothing was reported after September 3rd.

Salmon were first taken on June 3rd, and the catches throughout the month were fair. From July 1st to 15th the catches, although regular, were light and the fishery closed on latter date. It is reported that the season's catch has been above the average and fair prices were obtained.

Squid appeared in small quantities on July 14th, but on the 18th became fairly plentiful and remained so until August 15th, although somewhat irregular. On the 16th they again were scarce and remained so until the close of the season.

On the whole the past season's work has been better than last year, but in comparison with the catches made from three to ten years ago, is far below the average.

L'ARDOISE.

Codfish were first reported on May 25th, but the catches were light owing to unfavourable weather and scarcity of bait until July 14th. About this time the boats were leaving for Scattarie and Lingan to prosecute the cod and herring fisheries. From July 12th to 18th those who obtained bait made fair catches, but the bad weather and scarcity of bait impeded this branch for small boats until the latter part of September when cod were reported coming inshore and the small boats were then able to obtain fair catches. Of the larger boats which went to the eastward they did well, returning early in August with full fares and left soon after on second trip. As in past season's the home catch would be very small if it were not for the grounds off Scattarie and Lingan which have supplemented the catch very considerably. Each year the fishermen are realizing more the necessity of larger boats. Already there are two or three small vessels completed and some large boats under construction.

Haddock appeared in light quantities on May 19th, but about the 26th they improved considerably, and whenever bait was obtainable the catches were good. From June 1st to September 22nd the catches, with few exceptions, were light.

Herring struck in the past season on June 14th in light quantities, but on the 21st became fair and continued so until the 29th, from which date the catches were light and somewhat irregular. In the first week of August they were reported good around Sydney and Scattarie Island. In the second week of September herring were too far out in deep water to set nets with any safety, and although the fish were large and reasonably fat the catches were light. It is reported that the season's catch has been light, very few having been exported and scarcely sufficient taken for local consumption.

Lobster fishing commenced in April, but catches were light until about May 10th, when fair fishing was reported for about 8 days. During the following week the catches were again light, but from the 27th to 31st were fair. After this they were, with one or two exceptions, scarce until the season closed. On the whole the season's catch is an average one and compares favourably with 1897. It is reported that this fish is moving further out into deep water each season, and as the number of fishermen increases yearly and the gear required is more expensive, the catches are consequently lighter and the expenses greater per man.

Mackerel appeared as early as May 20th the past season, but the catches were light until the 26th, when some fair hauls were made for a few days. About the 28th some very fair catches were also reported at Point Michaud and Black Head. On the 30th they were reported to have passed close inshore and in small schools ; but although the catches were reported light a fair estimate of the catch cannot be given as fishermen sold direct to baiters at nets for $5 and $6 a piece. Not many salted. It is estimated that the season's catch for some boats will be only five barrels, while others will likely reach 15 barrels.

LOUISBURG.

As a reporter was not appointed until July 11th, in consequence of the death of our late reporter, Mr. P. O'Toole, the dates of the first striking in of fish could not be obtained.

Codfish.—Although this fish was reported quite plentiful in the second week of July the catches were light in consequence of the large number of dogfish on the coast and scarcity of bait. During the latter part of July and until about August 21st bad weather prevailed and impeded fishing, still codfish were reported in fair quantities. From latter date until September 20th fish and bait were reported scarce, and from September 20th to October 2nd there was no fishing. On the 3rd and 4th October boats varied from one to four quintals, but very few were afterwards taken. On the whole it is reported that the catch in general has been better than for some years past and boats have averaged about 75 quintals. It is contended that had bait been more plentiful the catch would have been much better.

Haddock were not reported during the season, although quite plentiful in June, and the catch was small owing to the scarcity of bait.

Herring when reported on July 11th averaged 100 per net, and light catches were made until the 26th. During the third week of July good signs were reported, but owing to the prevalence of dogfish nets had to be removed. In the last week they were reported plentiful and good average catches were made until August 1st when they gradually struck off and were not reported after August 16th. It is reported that the boats only averaged 10 barrels, which was not an average season's catch.

Lobsters.—The season's catch is considered an average one, boats having averaged 5,000 fish. Storms were not as frequent as in 1897, and consequently the destruction of traps was not as great.

Mackerel.—The only catch reported during the season was on September 9th, when light hauls were made off Big Lorraine. It is reported that the boats only averaged about four barrels the past season as the schools were broken up in the spring.

Squid, as far as reported, were only taken in small quantities during the second week of August.

MABOU.

Alewives were first reported on May 19th, and light catches were made until about the last of June.

Codfish were first taken on May 16th, and although they were fairly plentiful little attention was given this fishery as the lobster fishery was being vigorously prosecuted. Bad weather prevailed during the first three weeks of June and the catches were very light. During the remainder of the season, or until September 10th, they were found in very fair quantities, but bait was reported very scarce the greater part of the time. From September 10th to October 10th was very stormy and all operations were suspended.

Dogfish made their appearance early in September in large quantities, consequently very few line fish were taken during the remainder of the season. Owing to the low price of oil this fish is not of much commercial value ; therefore the fishermen do not prosecute this branch to any extent.

Haddock and Hake.—The former made their appearance on June 22nd and the latter on the 27th, and the catches until August 4th varied from fair to poor. During the remainder of the season they were scarce.

Herring struck in fairly good on May 5th, and the spring catch is reported to have been fairly good. The summer and fall catches were very poor and it is reported that the total catch was used for bait.

Lobsters were first reported on May 5th, and the catches varied from fair to poor throughout the month. In June stormy weather prevented good fishing and on the 18th a large number of traps were reported damaged. In July bait became scarce and consequently catches light, and the total catch is estimated somewhat below that of 1897.

Mackerel made their appearance on July 11th, but the catches were very light throughout the season, and it is doubtful if more than three barrels were taken between this station and Port Hood. During the first and second weeks of August they were reported schooling, but would not take hooks, and those caught in nets on August 11th were reported to have been unusually large.

Salmon appeared first on June 21st, but the fishery in this division is reported to have been a failure. It is generally supposed that the lobster traps and offal in connection with them drive salmon off this shore. At all events this fishery is on the decrease and can only be accounted for by the fact that a great many lobster traps are annually set on the salmon grounds.

On the whole the catch of all kinds of fish is somewhat below that of 1897, and consequently below the average. During the spring months the catches of these fish were poor, but during the latter part of July, August and the first week of September were fairly good.

MARGAREE.

Alewives were taken in light catches from May 14th to June 1st inclusive.

Codfish were first reported about June 1st, from which date the catches were very light until the 15th. From this date until the 20th they were reported plentiful on the grounds and fair catches made. From June 20th to July 10th they were reported scarce. From latter date until August 1st they were plentiful on the coast, but owing to scarcity of bait the catches were light. Throughout August they were reported on the grounds, but the abundance of dogfish not only prevented handling but destroyed many of the best nets. Cod continued fair throughout September, but in fine weather the fishermen devoted most of their time to mackerel fishing, and consequently the catch of cod was light. This fish was reported to be on the coast until after October 15th, but weather was unfavourable. It is estimated that the total catch for the season has been about 75 per cent of an average year.

Dogfish put in an appearance the latter part of July and remained throughout August and part of September.

Haddock, movements similar to the cod, only the catch was much lighter.

Hake was reported scarce throughout the season, except a few days in August and September when fair catches were reported.

Lobsters struck early in May and continued good until June 10th, when a storm came on and greatly damaged the fishing gear. After this the catches were very light until the end of the season.

Mackerel appeared about July 8th in small quantities. Throughout August they were reported on the coast, but would not take the hook. Only on the 26th and 29th of August were fair catches made. They were reported on the coast until September 27th when a storm struck in and none were reported afterwards.

Some fishermen maintain that there would probably have been good catches but for the dogfish.

Salmon struck the coast about June 4th and the catches were light until the 12th. From latter date until July 8th the catches varied from fair to good, but afterwards began to drop off gradually until August 1st. It is estimated that the season's total catch is a shade above an average year. Some complaints have been current that the lobster gear was interfering with the salmon fishing.

Squid appeared about July 25th, and remained on the coast for the most part of August and September.

MEAT COVE.

Codfish were reported plentiful off here on May 14th, but no catches were made until about the 26th, and but few light catches were reported during the season. As there is no market for this fish, fishermen do not prosecute it beyond getting a sufficient supply for home consumption and local use.

Herring struck in fair quantities on May 10th, and the catches varied from fair to poor the rest of the month. Few were afterwards taken as the weather was rough and the season's catch is considered a failure.

Lobsters.—As bait was not obtainable until about May 4th no traps were set. On latter date light catches were reported by the few traps which were then set, but increased about the 10th and good fishing was reported until June 10th when bad weather stopped fishing. During this period much bad weather was experienced and many traps were destroyed. During the remainder of the season the catches varied from fair to poor. Season's catch considered an average one.

Mackerel, which is the most important branch in this district, struck this season on July 6th in fair quantities, and catches varying from fair to poor were made during the season. At Dingwall and Sparling's Brook (in Aspy Bay), Money Point, Bay St. Lawrence, Poulet's Cove and Pleasant Bay very good catches were made.

Salmon were first reported on May 31st, and the catches varied from fair to poor until the season closed on July 9th.

PETIT-DE-GRAT.

Alewives.—The past season's catch has been the poorest ever experienced and is reported to be fast becoming extinct.

Codfish were first reported on May 30th, but the catches were light until about July 1st when they struck off into deep water where good catches were occasionally made. The best catches are reported to have been made in August. Throughout September and October very little fishing was done as bait could not be obtained and fishermen had to dig clams which caused a great loss of time. During the latter part of June and former part of July good fishing was reported on Quero Bank. It is further reported that in the latter part of September dogfish were so plentiful that hooks were carried away when fishermen tried for cod. Total season's catch is estimated to show a decrease of about 450 cwt. as compared with 1897. In addition to the total catch it is reported that 1,500 galls. of oil were extracted from the cod and haddock and exported.

Dogfish.—This destructive fish made its appearance about August 1st and has caused an estimated loss of about $2,000 by eating and destroying nets. Fishermen so dread these fish that they would not set their nets which probably accounts for the shortage in the herring catch.

Haddock struck on May 10th, and very fair catches were made each day throughout the month. During the remainder of the season the catches varied from fair to poor, although intermittent. Some boats caught as high as 50 cwt., and the total season's catch will show an increase, compared with 1897, of about 1,900 cwt. which sold at $2.25 per cwt.

Herring appeared much earlier than usual, and during the latter part of April light catches of small sized fish were made. This assisted the fishermen very greatly as it provided bait for their trawls and thus did much to increase the catch of haddock. From June 15th until about August 10th they were scarce, but about latter date again struck in and good catches were occasionally made. It is estimated that the total catch will be about 1,400 barrels, which is reported to include the baiting of 23 bankers of which four were American vessels under Dominion Government license.

Lobster fishing commenced about March 20th, and proved fair until about the last of May, when they commenced falling off. Some of the fishermen then hauled up their gear and prosecuted the cod fishery while others kept lobstering which appeared to decline from day to day. It is estimated that the season's catch has been 1,400 cases and 60,000 fresh lobsters exported to the United States. Although the catch has been somewhat below that of 1897, fishermen will be about as well remunerated, as the prices obtained were higher than in the previous year, viz.: from 6 cents to 7 cents for 10½-inch lobsters and over for export, while the smaller ones for canning realized $2.25 per cwt.

Mackerel struck in fair quantities on May 25th, and fairly good catches were made until about June 8th, since which time they have been scarce. The only reason assigned for their not appearing in large numbers is that they are too constantly chased by seiners which compels them to take a different course and usually pass in very deep water. The total season's catch is estimated at 30 barrels and 550 fresh fish which were sold for home consumption at 5 cents. This in comparison with last season shows a decrease of about 60 per cent. In addition to the home fleet there were three vessels fitted out and proceeded to the Magdalen Islands and did fairly well. Their total catch is estimated to have been 180 barrels which they disposed of at an average of $10 per barrel.

Salmon were first reported on May 25th, which is somewhat earlier than in previous seasons. Although they did not appear in such quantities as in the previous year, the catches were very fair, as nets were set inshore, until June 23rd when they began to disappear. This fish is sold fresh, and not salted, as they demand a better price when fresh.

Squid appeared about July 7th, but being scarce boat fishermen could not capture sufficient for bait, and were compelled to dig clams. There is a noticeable falling off in this valuable bait fish.

New Industry.

A new departure in the haddock line has recently been undertaken, viz., the canning of haddock or "Finnan Haddie." The fresh haddock are placed in a light pickle for 24 hours, then smoked in the same heating process as a lobster, and then canned. About 200 cases were put up the past season as an experiment and shipped to upper Canadian cities where, it is understood, they are selling readily. They are pronounced an excellent article of food.

ST. ANN'S.

Codfish appeared May 19th, and the catches until September 20th were light, with the exception of the second and third weeks of July and second week of August when fair fishing was reported. While the above is only for the inshore fishing it is reported that fair fishing was found all season by large boats in deep water.

Haddock.—In the second week of June some good catches were reported by traps and again in the second week of August fair catches, but no regular fishing was reported until August 26th from which date light catches were made daily until September 20th.

Hake were taken in light but regular quantities from August 26th until October 1st when dogfish appeared and operations ceased.

Herring.—On April 19th the harbour was reported clear of ice and light catches of herring were made until about May 5th when they appeared in greater quantities. About May 13th two traps were set and on the following day one of them had 30 barrels. They continued in good quantities until about the 23rd when they began to gradually strike off and the catches were very light during the remainder of the season, although good signs of large herring were reported in the bay in the first week of July.

Mackerel were first reported on June 2nd when two barrels were taken in trap. A few light catches were made that week, but none were afterwards reported until about August 8th when light catches were regularly made by traps throughout the remainder of that month.

Salmon appeared in fair quantities on June 11th, but on the 16th they became scarcer until about July 9th when this fishery was reported over. It is reported that the catch will be in excess of that of 1897.

Squid struck on July 6th in fair quantities, but from the 16th until September 20th, although they were plentiful the catches were light as they would not jig.

ST. PETER'S.

Alewives were taken in light catches during the first two weeks of June.

Codfish were reported fairly good in Bras d'Or Lake on May 3rd, and fair fishing continued throughout the month. Catches at this port were not made until about May 11th, but were fairly good until the 22nd when there was a slight falling off. On the 20th bankers were arriving with good fares, but weather was bad. From June 1st to 23rd the catch continued light although on the 18th good catches were reported in deep water when bait was obtainable and weather favourable. Fair catches were reported daily from the 23rd to 30th, but throughout July the catches were light. During the remainder of the season the weather was much broken and bait very scarce, consequently the catches only varied from fair to poor. It is reported that the catches made by vessels from this port and adjacent districts on Eastern Banks and in North Bay will exceed those of 1897. Grand Bank fishermen all made good fares of cod of large size and good quality and as prices are ruling high fishermen will be well remunerated.

Haddock were first reported on May 13th, but the catches were rather light until the 23rd June when fair fishing was found for about a week. Throughout July and September fishing was rather poor but no catches were reported in August or October. Total catch considered in advance of that of 1897.

Herring were first reported about June 9th, and light hauls were made each day for about two weeks. About the 24th this branch improved very noticeably and boats varied from 10 to 20 barrels. About September 4th a school struck in when a few of the fishermen did fairly well. From the last week of April until the 12th of May large quantities of herring were taken in Bras d'Or Lake. These supplies were used for home consumption, lobster bait and bait for bankers.

Lobster fishing commenced about April 26th, and light catches were made regularly until about May 4th. From latter date until June 30th catches varying from fair to good were reported. Early in the season a large proportion of the lobsters was brought to this station from Bras d'Or Lake. It is estimated that the season's catch will include about 748 cases and 1,500 live lobsters exported to the United States.

Mackerel appeared about May 30th, and light catches were made inshore for a few days. Those who set in deep water varied from 10 barrels to 20 barrels. Fish were large and fat. The remainder of the season proved a failure in this branch.

Salmon were taken in small quantities from May 27th until July 9th, and were all reserved for local use. This branch is not prosecuted to any extent.

PRINCE EDWARD ISLAND.

ALBERTON.

Codfish were first reported on May 23rd, but the catches were light until about June 5th, when they became fair and remained so until the 21st when they were again scarce. From latter date until about August 12th the catches here and at North Cape were generally poor, but on August 13th struck in greater numbers and the average catch until September 26th was very fair in this district. Very few were afterwards taken, particularly in October, when the fish were scarce and the weather very rough.

Hake appeared in small quantities on July 4th, but improved about the 25th, from which date until the last of September the catches were very fair. It is reported that this fish was in good supply all the season in this district but owing to the scarcity of bait the catches were curtailed.

Herring are reported to have appeared as early the past season as April 25th, but the catches were light until about May 5th. From this date until June 7th they were very fair and are reported to have schooled as usual at North Cape. Very few were taken during the remainder of the season. It is reported that fishermen took all the herring they required for bait and could have taken thousands of barrels more had salt been plentiful and fish required.

Lobsters were reported in good quantities at Frog Pond on May 9th, but the catches at this station were light. From latter date until about June 1st the catches were on an average fair, but during the remainder of the season were poor.

It is reported that the past season's work has been disastrous to the fishermen who fished in this district. Many men were brought here from different sections of Nova Scotia and New Brunswick and after fishing for two months they scarcely had sufficient cash to pay their passage home. It is estimated that the season's catch will be about 50 per cent below that of 1897.

Mackerel were first taken on June 11th, when two Nova Scotia vessels reported having taken 40 barrels each in nets. From June 14th until about July 18th light catches were regularly made, and on latter date were reported schooling at Sea Cow Pond, but none were being caught. They continued schooling for about a week and on the 22nd were reported to be taking hooks freely at North Cape. Catches continued light, however, until about August 3rd when fair hauls of large sized fish were made each day for about a week. During the remainder of the season the catches were very light. It is reported that the greater portion of fish caught by men of this district was taken either in Bay des Chaleurs or other sections and that the shore boats will not average one-half barrel per man.

The following extract is from the special report of Mr. John P. Brennan, Reporter for the Fisheries Intelligence Bureau at Alberton, P.E.I. :—

"I would most strenuously recommend that our fishermen provide themselves with proper boats to go out 10 miles from land to fish, as the inshore fisheries are a thing of the past. I would further recommend that unless our fishermen provide themselves with boats of at least 25 feet keel, that the Government give notice all claims for fishing bounties will be stopped and no bounty be paid, excepting to the hardy hard-working fisherman who braves the wind and waves by having a boat that can go off shore in rough weather, after the type of those boats at Caraquet and Shippegan, N.B., and when they get boats of this class, a double bounty will be paid. By this method we will be able to train up a good hardy lot of fishermen, as we had in days gone by, and I submit an inducement as above is the only means to get our men out of the easy, lazy groove they are dropping into. They are now following the fishing, off and on, as a mere sport or means to get credit from the outfitter who sooner or later comes to grief.

MIMINEGASH.

Codfish were first reported on May 31st, and the catches continued fairly good until June 14th, from which date they were scarce until July 6th. During the following week fair catches were reported, but from July 12th until August 28th they were light, and quite irregular in the latter month. Bad weather was frequently reported to have caused a suspension of fishing operations, but whenever boats were able to get out they found fish in fair quantities.

Hake were reported on July 26th this season, and the catches were light until about August 28th when they became more plentiful and the catches varied from fair to good until the last day of September. Until reports ceased on October 15th very few were taken during that month.

It is reported that very little attention is given these branches and that fishermen prefer lying about the shores awaiting the mackerel to strike than to embrace a certainty. During the past few years the mackerel have been very scarce, and as very little attention was paid to these branches the fishermen felt the short catch of mackerel very keenly. It is felt that a larger class of boat is necessary and unless this is obtained by the fishermen, which would then enable them to prosecute the cod and hake fisheries more extensively and supplement the mackerel catch, they will continue to be unsuccessful.

Herring struck in on May 12th, and fair catches were made until the 26th when they began to slacken off and the catches were poor until the last of the month. They were not afterwards reported until September 27th, when the fall run struck in good numbers and fair catches were made whenever weather permitted.

Lobsters, although reported in fair quantities from May 5th to 20th, were only taken in light catches as the weather was bad and impeded fishing. From latter date until the season closed they were reported scarce. It is estimated that the season's pack was considerably below that of 1897, which was not an average year.

Mackerel were first reported on June 14th, when a fair catch was made by nets. After this they were scarce until July 5th when they again appeared fairly plentiful for about a week, but afterwards were scarce until the season closed. The season's catch has been poor, and it is reported that none were taken with hook and line and no schools were seen on the coast at any time during the season.

GEORGETOWN.

Codfish struck inshore about May 14th and some fair catches were made, while herring were on the coast. Little or no attention is given to this valuable fishery by boat fishermen during the lobster season. Few small crafts were employed in this and hake fishing this season, principally hand lining. Fishing was fair when a supply of fresh bait was secured. Squid were difficult to jig and herring scarce on the banks. Cod were found to be plentiful in the gulf up to November 1st.

Hake was on this coast and fishing commenced about July 23rd when good catches were made off Grand River, Panmure Island, Roolo Bay Head and other parts of this section of the gulf where bait was secured. Later in the season herring bait being scarce and difficult to procure, perch and smelt were sought after for bait. Hake were reported to have been numerous in the south-eastern part of the gulf up to November 15th this year.

Herring caught in this vicinity are chiefly used for bait and none for export. Their first appearance this year was on or about April 8th when a few were netted and poor catches were reported until May 12th. From latter date until the 31st they were more plentiful, and during the time this fish was on the coast a number of bankers that had arrived for bait were supplied. The schools moved offshore about June 6th and some catches were secured off Pictou Island. The body of herring that sought the bays and rivers this year was not nearly as large as in former years, but appeared in small schools or pools, where they mesh a section of a fleet of nets would be filled, whereas nets at a short distance away would have only a few—say, from one-quarter to one-half barrel, and in consequence many fishermen, eager to sell bait to the bankers, ran short of their supply for lobster traps.

Lobster fishery commenced about May 1st, from which date fair catches were made until the 23rd. From latter date until the end of the season the catch per trap was poor. A number of fishermen, having traps placed several miles from shore, removed them to shallower water and obtained a better catch for a few days when they again fell off.

Mackerel made their appearance on or about July 5th, and a few were netted daily and disposed of fresh. The catch throughout the season being poor and few schools were reported. One off Boughton Island on July 13th, and one off Pictou Island on July 25th, and also one off Panmure Island on August 16th. This branch is reported to have been a failure this season, there having been only a few barrels packed for export.

Squid were taken in light catches from August 10th until September 1st, inclusive. They were reported plentiful on August 22nd but would not jig.

MALPEQUE.

Codfish were taken in light catches on May 27th, but on the 30th they became more plentiful and very fair fishing was reported regularly until September when a slight improvement was noticeable. This, however, did not long continue for windy weather greatly interfered with the catches throughout October.

Hake were reported very good on August 11th, but on the 14th they became only fair and continued so until the 20th, after which none were reported, as it was said that it was difficult to obtain a market for them.

Herring struck on May 4th, and fairly good catches were made during the month. About May 15th they were plentiful, but fishing was impeded by the large quantities of ice then in the harbour. Sufficient was taken, however, for bait and local use.

Lobsters were first reported on May 17th, but owing to a heavy north-east storm about this time, which destroyed a large number of traps, very little was done until early in June when fairly good catches were made and fish were reported larger than in the previous few years. It is reported that the total season's catch is much below that of previous years, but the prices were higher.

Mackerel were not taken the past season until July 7th when fair hauls were made by nets for a few days. After this they became scarce and with few exceptions remained so during the rest of the season. Towards the last of July it was reported that 230 mackerel filled a barrel. These in the latter part of August were exported to Philadelphia, fishermen realizing $12 per barrel ; shippers providing barrels and salt. In the latter part of September $17 was realized and all that could be secured were exported to the United States. It is reported that fully 100 barrels were taken in this locality the past season.

NEW BRUNSWICK.

CARAQUETTE.

Codfish were first reported on May 30th in good quantities, and the season's total catch is considered quite satisfactory and about equal to that of 1897. Bankers during the season obtained good supplies of herring and clam bait which were, as usual, plentiful.

Herring are reported to have struck during the last week of April and the catches were good until the last of May. None were afterwards reported until September when the fall herring struck quite plentifully and the catches made were considered very good.

Lobster fishing commenced as soon as the harbour was clear of ice on May 11th, and the catches, as far as reported, were on an average fair and the season's catch is considered about equal to last season's.

Mackerel.—The only catch reported the past season was on September 16th when a light haul was made.

Salmon are reported to have been very scarce this season, and the total catch will be about 50 per cent short of last year's.

ESCUMINAC.

Codfish appeared in very fair quantities on June 20th, and remained so until July 18th, when fishing improved and good catches were made until August 4th. From latter date until end of the month they were fair, but during the first two weeks of September they were again reported in good quantities. Bad weather then setting in the catches were afterwards light until the season closed.

Herring first appeared in light quantities on May 10th, and although not reported regularly the season's catch is said to have been very good.

Lobsters were first reported on May 10th, but the catches throughout the season were light. Of the four factories in this district the total pack is estimated at between 1,100 and 1,200 cases. The plant used was about 7,500 traps divided among 31 boats.

Mackerel were first reported on July 7th, and the catches until August 19th were very light. Very few were afterwards taken.

Salmon were first reported on May 26th, from which date light catches were regularly made until July 13th. No reason can be assigned for the scarcity of this fish.

Shad also appeared on May 26th, and whenever weather permitted light catches were reported.

SHIPPEGAN.

Codfish appeared plentifully on May 30th, but on June 1st the catches were reported light owing to rough weather and the fishery was not in full operation. About the 7th there was a slight increase which continued until about the 13th when bankers made good catches, but nothing was done inshore. During the remainder of the month very high winds prevailed and very few fish of any kind were taken. This fish was very plentiful in the first week of July, bankers having made large catches, and appear to have remained plentiful on the ground throughout the month, although the catches were not always uniformally large owing to the great scarcity of bait. Whenever supplies of bait could be obtained during the latter part of the season, fish could always be found on the grounds. It is reported that during the past season from 90 to 100 vessels and boats were employed in this fishery which is the staple industry of this district. The season's catch has been good and above that of last year. It is estimated that about 10,000 quintals of dry fish were shipped in barrels to Mediterranean ports in addition to considerable quantities to local markets on this side.

Herring were first reported on May 14th, and the catches throughout the remainder of the month appear to have been good. They were not afterwards reported, but the total catch is reported to have been small.

Lobsters.—The heavy N.E. winds which prevailed in the early part of May retarded the setting of traps, but about the 14th they were said to have been in good quantities. In the latter part of May they slackened off considerably and were of small size. About the middle of June they were reported very scarce on outside grounds, but inshore they were more plentiful. Very few were taken the remainder of the season and the total catch is said to be at least 25 per cent less than last year. The 20 factories situated on Miscou and Shippegan Islands packed about 6,000 cases. These factories employ 400 men and 160 boats besides from 12 to 15 hands in each factory, packing, cracking, &c. On the mainland of Shippegan, four factories with about the same average catch, men and boats packed 1,000 cases. It is quite noticeable that this fishery is falling off yearly and that very many more traps are now used than formerly, with smaller returns proportionately.

Mackerel fishery is reported a total failure the past season, and but few barrels were taken.

Salmon of large size were reported in fair quantities on May 31st, but the following day were scarce and continued so until the last report on June 13th.

Smelt.—This fishery is extensively prosecuted, and catches find a ready market in New York and Boston. The work is carried on in winter, the fishermen building huts on the ice. Large openings are made in the ice and poles are erected on which the nets hang, and large quantities are thus taken.

GRAND MANAN.

Codfish were first reported this season on May 6th at Bulk Head, but the catches were light until about the 13th when they began to improve and during the following week boats varied from three to five quintals. On the 26th good fishing was reported on gravelly ground which continued until the end of the month. During the first week of June this fishing was very good at Bulk Head and vessels averaged eight quintals. From June 9th to 18th the catches were very fair. On July 9th it was reported that cod were after shrimp and would not bite; consequently but few were taken inshore. For the week ending July 23rd vessels were reported to have taken 18 quintals per vessel of three men to each. Very few were taken during the first three weeks of August, but from the 22nd until last of September the catches varied from fair to poor on soundings, Rippling and at Bulk Head. Catches during the first eight days of October were very light. It is estimated that the total season's catch will not exceed 700 quintals, which is a decrease in comparison with 1897.

Haddock were first taken on May 6th, and although the catches varied from fair to poor they were irregular and the season's catch will not exceed 500 quintals.

Hake appeared as early as May 16th the past season, and the catches were on an average fair until the end of that month, although they were reported plentiful on Bulk Head on the 21st and good on gravelly ground on the 26th. During the first three weeks of June they were fair and unusually large catches were made as it was very early for this fish to appear. From June 21st to August 8th they were light, but after latter date varied from fair to good until September 13th after which they were scarce. It is estimated that the total quantity cured and dried for market has been 5,000 quintals. In addition to this 400 barrels of fish oil have been put up here.

Halibut were only reported from May 11th to 31st during which time the catches were light.

Herring were first reported on May 17th when they are said to have been plentiful, but with the exception of them striking in and schooling at Bulk Head and on soundings in the latter part of the month, no catches were reported. With the exception of small herring in weirs at Seal Cove, which were used for bait on July 8th, no catches were reported until July 20th when light catches, averaging about two barrels per net of large fish, were made on northern side of Grand Manan. About July 30th fishermen were reported to be netting about four barrels per net of large fish and varied from one to five barrels throughout August. During the remainder of the season the average catch was good, particularly about October 17th when fishermen were making good catches of herring of good quality in Long Pond Bay. This fishery, of which the smoked branch is the most important, shows a decrease in comparison with last year, there having been only 800,000 boxes of fish of very small size, commonly called "mediums" put up. Large herring for smoking purposes are reported to have been a total failure and it is thought to be caused by the taking of so many small fish for sardine factories. Of this class there have been taken and shipped to the United States 7,500 barrels. This is, comparatively speaking, a new branch in the fishing industry as far as Grand Manan is concerned. Pickled herring show an increase over 1897, there having been 5,000 half barrels taken, but the fish are reported to have run quite small.

It appears to be the general opinion in this district that unless some measure is adopted to prevent the wholesale slaughter of small herring that this industry will soon be a thing of the past.

Lobsters.—The first report received on May 11th indicated that this fishery was fair, and although somewhat scarcer during the remainder of the season it was reported that the factory at Grand Harbour was boiling five tons every other day.

The total quantity taken from April 16th until June 4th is estimated at 171,391 pounds, or an average of about 21,424 pounds per week. Of the season's catch 848 cases have been canned and 112 tons or 224,000 pounds of live lobsters exported to the United States. It is a noticeable fact that this branch is falling off each year and it is thought to be due to the over fishing of small lobsters.

Pollock, although not reported, show a large increase, there having been 3,500 quintals taken.

QUEBEC.

GASPE.

Codfish, although reported in considerable quantities on the coast on May 24th, no catches were made until the 28th, after which they were poor. It is contended that the scarcity of bait throughout the months of June and July was a great injury to the fishermen, and that the season's catch will scarcely be an average one.

Herring were first reported on May 11th in fair quantities, but afterwards were scarce. The fall catch, however, is reported to have been a fair one.

Mackerel are again reported to have failed to reach these shores the past season.

Salmon were first taken by net on May 11th, and the catches throughout the season varied from fair to poor.

GRAND RIVER.

Caplin appeared only one day in the first week of July. The catch was slightly pickled and dried for local use.

Codfish were first reported on May 23rd, and the catches (inshore) were fairly good until the last of June. After that it was very poor. The bank fishery was a partial failure in June, July and August and very little was done. Fair fishing, however, was reported during the early part of September, but rough weather setting in ended the season's work. Dogfish were again troublesome this season, particularly in August. Total catch estimated about 3,000 drafts short of last year's.

Herring struck in fair quantities on May 2nd, and the average catch throughout the season was fair. In the third week of July good quantities were met with on the banks, but as the weather was bad very few were taken. Fish were of small size the whole season.

Lobsters appeared early in April and lasted until about the 14th June in fair quantities when high winds interfered. There is one factory located here and the other at Little River—two miles distant—and they report lobsters to have been of small size the whole season.

Mackerel are reported to have been very scarce both inshore and on the banks the whole season.

Salmon were first taken on May 23rd, but the catch has been small. There were only three stands with nets in operation 12 miles distant. Fish of very fine quality were reported plentiful in July in the river owned by Mr. Louis Cabot, of Boston.

Smelt fishing commenced about October 1st, and fair catches were reported until the 17th.

Squid were first reported on July 14th, but the catches were light until the last of September when they became plentiful for a few days only.

PASPEBIAC.

Caplin were first reported on May 30th in light quantities, but during the two following days were plentiful. Very few were afterwards taken.

Codfish were first taken on May 26th, but the catches were light until June 7th, after which very fair catches were made whenever weather permitted until the 30th. As bait was then very scarce the catches were light until July 12th, after which they varied from fair to poor, according to the supply of bait until the end of the season.

Herring struck in on May 4th, but with the exception of a good average catch from the 10th to 17th inclusive, were scarce throughout the month. Catches varying from fair to poor were regularly reported throughout June and July. A few very good catches were made during the last week of September.

PERCE.

Codfish appeared in good quantities on May 20th, and until the end of June remained so. Owing to the roughness of the weather bait was very hard to obtain, and the catches consequently were not as good as they otherwise would have been under more favourable circumstances for the fish were on the grounds in good numbers. Bad weather and scarcity of bait continued throughout the balance of the season, but occasional good catches would be reported. On the whole the summer catch was fairly good, but the fall catch below the average.

Herring.—Few herring appeared on May 7th, but about the 10th increased in quantity, and the average catch, with the exception of the month of August when they were scarce and irregular, was fair throughout the season.

Lobsters were first reported on May 3rd in fair quantities, and the catches throughout the season, or until June 24th when fishing closed, varied from fair to poor. Total catch below the average.

Salmon.—Few light catches were reported during the first two weeks of June.

Squid appeared on August 9th, and during the remainder of that month some very good catches were made. In September they were scarce, none having been reported after the 14th.

LONG POINT OF MINGAN.

Codfish were not reported this season until June 18th, when a light catch was made. From that date until June 13th bad weather impeded fishing, but on latter date they appeared in good quantities and good catches were made each day for about a week. Bad weather again set in and no fishing was done until August 11th when they were reported very good. During the following week no catches were reported, but light catches were reported at Piashtre Bay and Aguanus. From the 20th to 31st good fishing was reported at this station and fair catches at Piashtre Bay and Aguanus. During the remainder of the season the weather was stormy and no catches were reported.

Herring were not reported during the season.

Launce were first reported on June 18th in good quantities, but were not afterwards reported until July 13th when some very good catches were made for about a week.

On August 11th a very good catch was made, and from the 20th to 31st they were fair and regular. Light quantities were reported at Piahtre Bay and Aguanus from August 20th to 24th inclusive.

MAGPIE.

Caplin appeared in very good quantities on June 4th, and remained so until bad weather prevented fishing on the 10th.

Codfish were first reported on May 31st, and the catches until the last of August varied from good to fair.

Herring.—The only catches of this fish reported this season were on July 19th and 20th and September 26th when fair hauls were made.

Launce appeared in very fair quantities on May 31st, and continued so until about June 7th, when they were reported more plentiful. Although the catches were not regular they were good until the 18th. Very good catches were made from July 13th to 18th, but poor from August 20th to 31st inclusive.

Salmon first appeared on May 31st, and the catches were fair until June 7th, when they increased in quantity and whenever weather permitted good catches were made until July 11th.

MOISIE RIVER.

Caplin were reported plentiful from June 21st to 29th inclusive, but nothing afterwards.

Codfish were first reported on June 8th, but the catches, as far as reported, were light until July 15th when fishing was fairly good for about five days. Stormy weather then set in and nothing was done until August 2nd when light intermittent catches were made until September 16th. From latter date until October 5th the fishery was reported fairly good.

Launce were first reported on June 8th, and although apparently very irregular appeared to vary from very good to good throughout the season.

Salmon were taken in light but regular catches each day from May 17th to 31st, but on June 1st were reported in good quantities which continued until the 8th. After this fishing was prevented by stormy weather, but from the 17th to 29th the catches were light.

SEVEN ISLANDS.

Codfish were first reported on June 8th, but the catches were light throughout the month. About July 15th they became more plentiful and fair fishing was reported, whenever weather would admit, until the season closed. Total catch estimated 50 per cent below that of 1897.

Herring.—Although herring were reported to have struck in at English Point on May 11th and extended as far as Godbout, catches were not made here until the 26th, when they were plentiful. During the first week of June there was a slight falling off and were not afterwards reported.

Launce appeared on June 8th and some excellent catches were made until the last of July, when they began to disappear and the catches were very irregular. In the first week of October they were again plentiful, but none were reported after the 5th.

Salmon were taken in good quantities during the first week of June, but were scarce the remainder of the month.

SHELDRAKE.

Caplin were first reported on June 4th, and the catches were very good until the 7th, when they commenced to decrease, and fair catches were made up to the 25th.

Codfish were taken in fair quantities from May 31st to June 18th when they became scarce and remained so until about July 8th. Fair catches were afterwards made until about the 21st when bad weather prevented fishing and nothing was reported until August 11th, from which date light catches were quite regularly made until September 26th, after which none were reported.

Launce appeared also on May 31st in fair quantities, which continued until June 3rd. Good catches were reported in the second weeks of June and July, fair from August 11th to 16th inclusive, but scarce the rest of the season.

Salmon were first reported in fair quantities on June 1st, and continued so until the 6th, from which date good catches were made until the 10th when stormy weather set in and prevented fishing.

ANTICOSTI.

ENGLISH BAY AND STRAWBERRY COVE.

Caplin were reported good on June 14th, but were afterwards scarce and irregular throughout the month.

Codfish were first reported on June 1st, and the catches varied from fair to poor throughout the month. After this the English Bay boats left for the mainland and north shore ports to fish. There they found fairly good fishing, but after the first week of July the catches were light until the season closed. The English Bay boats made several trips to North Shore. Total catch of four English Bay boats estimated at 148 quintals. Total catch of 17 half boats, Strawberry Cove, estimated at 450 quintals.

Herring struck in about May 25th, and few intervals remained from fair to good until the end of June. Little or nothing taken afterwards.

Squid were taken in very good quantities on August 5th and September 3rd, but were generally poor afterwards.

FOX BAY

Codfish were first reported in small quantities on June 7th, but in the third week were very plentiful when bad weather and scarcity of bait impeded fishing and scarcely any catches were afterwards made. It is generally reported to have been the poorest season known.

Herring struck about May 24th, and the catches varied from good to fair until the last of June. Nothing was afterwards reported except at Heath Point where about the middle of July fairly good hauls were made for a few days.

Lobsters are said to have been very good, but no reports were received of catches.

Squid.—None reported.

SOUTH-WEST POINT.

Caplin, Cod and Herring.—Catches of these fish have been apparently very poor the past season. No regular fishing boats were employed, but lighthouse people tried in vain all summer to get sufficient for local use.

Squid were reported fairly good throughout August and September.

In August, September and part of October a large school of whales were seen daily about this station, sometimes coming very close inshore. Immense flocks of gulls were also seen fishing along shore and in the bay. These were apparently getting some small fish, probably the little white fish mentioned in previous reports.

MAGDALEN ISLANDS.

Codfish struck inshore after the herring in the middle of May, and were plentiful all the summer months until the latter part of September when bait began to get very scarce and weather unfavourable. Few boats were engaged in this branch the past season, and consequently the total catch is light, although boats made good catches the greater part of the summer when the weather was fine.

Herring struck in plentifully on May 1st in many localities, but principally in Amherst Harbour and Pleasant Bay, and remained so until the latter part of the month when they began to leave the islands. During this period large quantities were taken for local use and a large fleet of bankers were baited besides a large quantity which was used for lobster bait. Herring were as plentiful as the previous year and larger quantities have been taken the past season than during the past few years.

Lobsters were first taken on May 11th, and the prospects were at first reported good, but the catches were light in all districts except Bryon Island where good catches were reported for a short while in June. On June 10th heavy N.W. gales did much damage to all gear on northern part of island, and afterwards the lobster grew scarcer and scarcer until factories were closing as early as June 27th. The average catch the past season has been poor owing to the increased number of factories, but the quantity packed is about the same as in previous years.

Mackerel appeared in the second week of June, and the catches made by netters were good, especially on the 5th. The prospects were most encouraging but only small catches were reported until about the middle of July when they began to take the hook freely. In the first week of August mackerel were reported plentiful, but would not take the hook owing, it was supposed, to the warm weather. The catches were poor at all sections the past season; still it is reported that double the quantity was caught this year in comparison to last year. The catches in some bays were fair, but in others a boat or two have done well while others did very poorly. The weather was fairly good for fishermen until the first part of October, since which time it has been blowing and unfavourable for fishing.

Most of the reporters have done satisfactory work in sending full and prompt reports to the Bureau from their respective districts. A few, however, have been negligent in this respect, and in regard to such I shall send special reports for the consideration of the Department.

I have the honour to be, sir,
Your obedient servant,
W. M. HUTCHINS,
Clerk in Charge.

APPENDIX No. 14.

THE FUR SEALING INDUSTRY OF THE NORTH PACIFIC OCEAN, AS AFFECTED BY THE BEHRING SEA AWARD AND CONSEQUENT LEGISLATION.

THE BEHRING SEA QUESTION.

The Honourable Sir LOUIS H. DAVIES, K.C.M.G.,
Minister of Marine and Fisheries.

SIR,—The various departmental reports have, from year to year, dealt with this question, the last previous publication forming Appendix No. 13 to the report for the year 1897.

DEPARTURE OF THE SEALING FLEET.

The spring sealing fleet for 1898 comprised 32 vessels, and began clearing for the season's operations in the month of December, 1897, during which month 15 vessels cleared, the earliest date being 6th December. By the 1st February, the whole spring fleet had cleared, the latest clearance being on that date, whereas, in the previous year, more than half the vessels cleared in February and March.

In former years the early coast fleet has been divided into two branches, one operating on the North American coast of the Pacific Ocean, and the other on the Asiatic side, working up the Japan coast to the vicinity of Komandorski Islands, off the coast of Kamtschatka. This year (1898), however, it is perhaps worthy of note, that only one vessel of the whole Canadian sealing fleet, the "Director," went over to the Asiatic side.

The following is a list of the fleet which cleared for the spring operations of 1898, showing dates of departure and arrival, and numbers and description of crews, and numbers of boats and canoes employed :—

BRITISH COLUMBIA SPRING SEALING FLEET, 1898.

License No.	Schooners.	Tons.	Masters.	Departure.	Arrival.	Crews.		Boats.	
						White.	Indians.	Boats.	Canoes.
				1897.	1898.				
1	Geneva	93	W. O'Leary	Dec. 6	May 11	24	......	8	......
2	Libbie	93	F. Hackett	" 15	Apr. 29	29	......	7	......
3	Doris	60	D. McPhee	" 15	May 5	6	20	2	10
4	Mary Taylor	43	A Nelson	" 22	Apr. 30	20	.....	5	......
5	Mary Ellen	63	J. G. Searle	" 24	May 14	8	22	2	11
6	Teresa	63	G. Meyer	" 27	" 5	7	20	2	10
7	Penelope	70	Dan. J. Macauley	" 28	" 18	6	18	2	9
8	Beatrice	36	Wm. Heater	" 28	" 5	5	16	2	8
9	Ainoko	75	Geo. Heater	" 28	" 27	6	18	2	9
10	Arietis	86	F. Cole	" 28	" 2	8	30	2	15
11	City of San Diego	46	M. Keefe	" 28	" 10	6	20	1	10
12	Ada	97	J. H. Noel	" 28	" 7	9	20	2	10
13	Otto	86	J. F. Gosse	" 29	" 23	7	22	2	11
14	Allie I. Algar	75	R. W. Lavender	" 29	" 10	23	......	7	.....
15	C. D. Rand	51	N. Blakstad	" 31	" 6	8	22	2	11
				1898.					
16	Saucy Lass	38	H. D. McDougall	Jan. 4	" 5	6	16	1	8
18	Victoria	63	J. Haan	" 6	" 5	7	20	2	10
19	Mermaid	76	J. W. Anderson	" 13	" 4	7	20	2	10
20	Umbrina	99	J. W. Peppitt	" 14	" 14	8	23	2	11
21	Enterprise	69	J. W. Todd.	" 14	" 5	7	25	2	12
22	Dora Siewerd	93	H. F. Siewerd	" 15	" 14	10	30	2	15
23	Carrie C. W	92	M. Foley	" 17	" 5	7	22	2	9
24	Hatzic	72	John Daley	" 19	" 30	7	24	2	12
25	Favourite	80	R. McLean	" 20	June 1	6	28	2	14
26	Minnie	46	V. Jacobsen	" 22	Apr. 30	6	24	3	11
28	Ida Etta	69	H. V. Hughes	" 26	May 6	6	25	2	12
29	Ocean Rover	55	O. Buckholz	" 26	" 4	6	12	2	6
30	Zillah May	66	S. Balcom	" 29	" 5	6	24	2	12
31	Ocean Belle	85	A. McDougall	" 31	" 5	7	18	2	9
32	Walter L. Rich	76	J. Anderson	Feb. 1	" 14	6	14	2	6
17	*Director	87	Fred. Gilbert	Jan. —	....	.....	......	......	....
27	†Venture	48	Alex. Reppen	....	....	.....	......	......	......
	Total	2,281							

* Gone to Japan. † Returned to Port.

While these vessels took part in the spring or coast fishery, returning to port, as indicated in the list, all but seven of them subsequently cleared for participation in the summer seal fishery in Behring Sea, where the season commences at the expiration of the close time, 1st August, and continues during that month and a portion of September, as a general rule.

The fleet which cleared for Behring Sea during 1898 is shown by the following list, comprising 28 vessels, and embracing all but 7 of those which operated on the coast, and a few others which did not:—

VESSELS CLEARED FOR BEHRING SEA, SEASON 1898.

Vessels.	Date.	Cleared for	No of License.
	1898.		
Mary Taylor	May 28.	Behring Sea	4
Pioneer	" 28.	"	35
Teresa	June 9.	"	6
Walter L. Rich	" 15.	"	32
Carrie C. W.	" 15.	"	23
Ocean Rover	" 15.	"	29
Saucy Lass	" 16.	"	16
Diana	" 16.	"	36
Victoria	" 17.	"	18
Ocean Belle	" 17.	"	31
Ainoko	" 18.	"	9
Beatrice	" 18.	"	8
Penelope	" 18.	"	7
Umbrina	" 18.	"	20
Arietis	" 20.	"	10
Otto	" 20.	"	13
City of San Diego	" 20.	"	11
Enterprise	" 21.	"	21
Zillah May	" 22.	"	30
Dora Siewerd	" 23.	"	22
Ida Etta	" 23.	"	28
Mermaid	" 23.	"	19
Libbie	" 24.	"	2
Minnie	" 27.	"	26
Hatzic	" 27.	"	24
Viva	" 28.	"	37
Favourite	" 28.	"	25
Abbie M. Deering	July 18.	"	38

CLEARED FOR JAPAN COAST, SEASON 1898.

Director	January	17

With the single exception of the schooner "Director," it will be seen that the Canadian sealing fleet this year confined its operations to the North American portion of the North Pacific Ocean, so that the Asiatic pelagic seal fishery, as the United States have prohibited pelagic sealing and the Russians have never participated therein, was left in the hands of the Japanese, or any British or other vessels which may possibly have been fitted out in Yokohama or Hakodate.

THE SEASON'S CATCH.

The following table, supplied by the Collector of Customs at Victoria, British Columbia, contains a complete detailed return of the season's operations of the Canadian sealing fleet, giving a statement of the vessels, tonnage, masters, crews, white and Indian, as well as numbers of boats and canoes employed in the industry.

BRITISH COLUMBIA

License No.	Vessels.	Masters.	Tons.	Crews.		Boats.		Parti-	
								British Columbia Coast.	
				White.	Indians.	Boats.	Canoes.	Male.	Female.
38	Abbie M. Deering	M. White	96	22	....	6	....	....	....
12	Ada	J. F. Noel	97	9	20	2	10	54	131
9	Ainoko.	G Heater	75	6	18	2	9	80	343
14	Allie I. Alger	R. W. Lavender	75	23	....	7	....	402	304
10	Arietis	F. Cole and W. D. Byers	86	8	30	2	15	70	159
8	Beatrice	W. Heater	66	5	16	1	8	167	163
24	Carrie C. W.	M. Foley	92	6	26	2	13	105	83
15	C. D. Rand	H. Blakstad	51	8	22	2	11	151	91
11	City of San Diego	M. Keefe	49	6	20	1	10	97	240
36	Diana	J. G. Searle	50	....	....	....	....	....	....
17	Director	F. W. Gilbert	87	23	....	6	....	16	14
22	Dora Siewerd	H. F. Siewerd	93	10	34	2	17	89	220
3	Doris	D. McPhee	60	6	20	2	10	84	257
21	Enterprise	J. W. Todd	69	6	28	2	13	89	220
25	Favourite.	L. McLean	80	6	31	2	15	179	152
1	Geneva	Wm. O'Leary	93	24	....	8	....	390	502
24	Hatzic	J. Daley.	72	7	24	2	12	179	85
28	Ida Etta	H. V. Hughes	69	6	25	2	12	117	90
2	Libbie	F. Hackett	93	8 29	14	2 7	7	204	57
5	Mary Ellen.	J. G. Searle	63	8	22	2	11	129	147
4	Mary Taylor	A. Nelson	43	6	16	2	8	200	338
19	Mermaid	J. W. Anderson	76	10	22	3	11	52	165
26	Minnie	Vict. Jacobsen	46	6	19	2	10	123	148
31	Ocean Belle	A. McDougall	83	7	22	2	11	66	61
29	Ocean Rover	O. Buckholtz	55	6	16	2	8	79	69
13	Otto	J. F. Gosse	86	8	28	2	14	217	242
7	Penelope	D. G. Macaulay	70	6	24	2	12	102	430
35	Pioneer	C. E. Locke	73	6	20	2	10	....	....
16	Saucy Lass	W. D. McDougall	38	6	14	2	7	85	77
6	Teresa	G. Meyer	63	8	23	1	13	42	256
20	Umbrina	J. W. Peppitt and C. Campbell.	99	8	30	2	15	117	169
18	Victoria	J. Haan	63	7	20	2	10	169	168
37	Viva	D. McPhee	92	7	21	2	10	....	....
32	Walter L. Rich	J. Anderson	84	6	26	2	13	144	86
30	Zillah May.	S. Balcam	66	7	22	2	11	95	86
....	Catch by Indians in canoes	....	....	....	....	....	....	....	....
35		Total	2,553	330	673	92	336	4,093	5,553

Port of Victoria, B.C.,
1st December, 1898.

SEALING REPORT, 1898.

culars of Catch.

Japan Coast.		Vicinity Copper Islands.		Behring Sea.		Totals.	Remarks.
Male.	Female.	Male.	Female.	Male.	Female.		
......	......	......	......	59	319	378	
......	...	..	......	......	......	185	
......	......	......	......	274	420	1,117	
......	...	...	......	......	......	706	
......	....	..	......	203	211	643	
......	.	..	.....	126	125	581	
......	......	......	....	302	167	657	
....	.....	.....	......	......	......	242	
...	.....	...	...	186	438	961	1 branded skin. Boarded Sept. 8th by Lieut. H. G. Smith, of H.M.S. "Pheasant."
......	......	.....	...	126	201	327	Boarded Aug. 12th by officers from H.M.S. "Pheasant."
201	159	20	30	......	......	440	
....	....	....	..	444	361	1,114	Boarded Sept 26th by Lieut. R. D. Scott, H.M.S. "Pheasant."
......	......	.....	...	......	......	341	
....	.....	....	....	275	317	901	Boarded Aug. 12th by Lieut. E. K. Arbuthurst, H.M.S. "Pheasant."
..	....	...	.....	250	188	769	Boarded Aug. 13th by Lieut. R. D. Scott, H.M.S. "Pheasant."
......	.	......	.....	......	......	892	
....	......	......	......	338	422	1,024	2 branded skins.
....	......	......	....	236	198	641	Boarded Aug. 13th by Lieut. E. K. Arbuthurst, H.M.S. "Pheasant."
......	......	......	....	116	114	491	
......	..	......	......	......	......	276	
....	..	....	....	251	468	1,257	
......	......	.....	......	396	860	1,473	
......	......	......	...	233	160	664	
......	......	......	.....	304	271	702	
.....	......	......	......	193	144	485	1 branded skin.
......	......	......	......	376	414	1,249	1 " " Boarded Aug. 26th by Lieut. R. D. Scott, H.M.S. "Pheasant."
......	..	....	....	210	295	1,037	Boarded Aug. 13th by Lieut. R. D. Scott, H.M.S. "Pheasant."
......	......	......	......	......	.....	453	These skins were reported on board at Ounalaska ; vessel missing.
.....	......	......	......	109	145	416	
......	......	...	......	155	173	626	Boarded Sept. 13th by Lieut. E. K. Arbuthurst, H.M.S. "Pheasant."
....	......	....	......	654	1,028	1,968	Boarded Aug. 17th by officer from H.M.S. "Icarus"; also " 24th " " " "Pheasant."
...	...	......	.....	1,004	764	2,105	1 branded skin.
......	......	......	......	191	459	650	
..	......	......	....	143	263	636	
......	......	.....	......	441	423	1,045	
......	....	......	......	......	......	1,100	
201	159	20	30	7,595	9,348	28,552	

A. R. MILNE,
Collector of Customs.

A comparison of the result of this season with that of 1897 shows that this year 35 vessels aggregated 27,452 seal skins, as against 29,392 skins for the fleet of 1897, which numbered 41 vessels. This demonstrates an increased catch per vessel this season over last year of, in round numbers, 67 seal skins. The catch by shore Indians in canoes is, of course, eliminated in both cases in arriving at these figures, but to complete the Canadian take for both years, we have only to add the Indian coast catch for 1897, 1,018 skins, and that for 1898, 1,100 skins, making the total result for the former year, 30,410, and for the latter, 28,552 seal skins.

It will also be observed that while 31 vessels, operating on the North American coast in 1897, secured 5,082 seal skins, a like number of vessels operating in the same waters in 1898 secured 9,646 skins. There were, however, in 1897, taken in Asiatic waters, 8,703 skins, whereas, in 1898, the only vessel which exploited those waters was rewarded by but 410 skins.

In 1897 the product of the Behring Sea season to 25 vessels was 15,607, while, in 1898, the 27 vessels which are shown to have sealed in the waters of that sea, secured an aggregate of 16,943 seal skins.

On the whole, it can fairly be said that, so far as the past two seasons are concerned, there is practically no change in the industry.

It is reported that the sealers have extended their spring voyages farther south than formerly, and that, as a consequence, they have met with considerable success, which may account, in some degree, for the largely increased coast catch for 1898.

One interesting feature of the season is that no fewer that five sealing schooners report having secured among their catch seal skins which, to all appearances, bear the brands which, for the past three years have been placed upon the seals by the authorities on the Pribylov Islands. These vessels are: "City of San Diego," one branded seal; "Hatzic," two branded seals; "Ocean Rover," one branded seal; "Otto," one branded seal; "Victoria," one branded seal.

The success of this expedient is not very apparent, when it is considered that the net result of the two season's branding operations shows a capture of six branded seals, out of a total take of about 30,000 of these animals at sea, but it would be unfair to draw any deductions from these facts until the number, age and sex of seals branded on the Pribylov Islands each season is known.

As in previous seasons, the sealers report the seals plentiful, but becoming more wary and difficult to secure. This is but natural, considering their constant pursuit by the sealers and the disturbance caused by patrolling steamships for a number of years past.

The weather is reported to have been bad for the Behring Sea season, the earlier part being marked by unusual fogs and rains, and the latter part by the prevalence of generally bad weather and gales.

By reference to the statistical abstract above given, it will be seen that the number of white men employed on the sealing fleet of 35 vessels was 330, and the number of Indians, 673. In 1897 the numbers employed in 41 vessels were 495 whites and 587 Indians. The tendency is more and more to employ Indians instead of white men, on the ground of economy.

PATROL.

The United States Government seems to have taken no part whatever, during 1898, in the patrol of the Behring Sea and North Pacific Ocean, as regards pelagic sealing, leaving that duty entirely to Her Britannic Majesty's Government, who entrusted this work to Her Majesty's ships "Amphion," "Icarus" and "Pheasant," with the result that one sealing schooner was seized, as explained under another heading.

SEIZURE.

The Canadian sealing schooner "Otto," Captain Gosse, was seized by Capt. Finnis, of H.M.S. "Amphion," in Behring Sea on the 10th September, 1898, for an infraction of

Article 1 of the Paris Award regulations, that is to say, capturing seals within the 60-mile zone. The captain admitted the offence, but pleaded extenuating circumstances. The vessel was brought to trial in the Vice Admiralty Court of British Columbia on the 28th November, the Chief Justice presiding.

The evidence offered was to the effect that the vessel was found about 10 miles inside the prohibited zone, with her canoes out, engaged in sealing. The day was clear and the master endeavoured to explain the presence of his vessel within the zone by stating that he was unable the day before to take observations, owing to thick weather, and also on account of his being misled by a chart, showing the currents. He further stated that on the 8th September he believed his vessel was eight miles outside the zone, by dead reckoning, and on the 9th that he was 4½ miles outside, and that while he was under the impression that he was getting further from the line, the current was having the opposite effect, and he had taken no observations before the boats went out in the morning.

Although the suit was entered for confiscation, a fine only was pressed for.

The text of the judgment is as follows :—

"The mere fact, which is admitted, that the ship was engaged in sealing in prohibited waters constitutes an offence under the Act. The ship "Minnie," 23 S. C. at p. 484. Mr. Pooley stated that he could only ask for a fine. Captain Finnis, the seizing office, having attributed carelessness to the master. Where the owner of a ship employs a competent master and furnishes him with proper instruments, and the master uses due diligence, but for some unforeseen cause, against which no precaution reasonably necessary to be taken can guard, is found sealing where sealing is forbidden, the Court would be well exercised by the imposition of a nominal fine only.

"But in this case the master, for eight days immediately preceding the day of seizure, was knowingly sealing in the close vicinity of the prohibited zone, and while I am desirous of making every allowance for him because of his having been misled as to the current by the chart upon which he relied, and in the difficulties owing to bad weather, and to his men not being well under control, I cannot acquit him of great carelessness in not taking a sight on that day before allowing his men to leave the ship.

"Having regard to the limit of £500, I think the justice of the case will be met by the infliction of a fine of £200, upon payment of which, within one month, the ship, equipage and cargo will be released."

The fine was paid by the owners.

DISASTER.

The sealing schooner "Pioneer," of Victoria, B.C., is reported missing, her last port of call being Ounalaska, and no doubt now exists as to her loss.

The "Pioneer" was a vessel of 73 tons, and carried a crew of six white men and 20 Indians from the west coast of Vancouver Island. On leaving Ounalaska she had on board 453 seal skins, taken in Behring Sea.

This is the only disaster or loss of life among the fleet reported this season.

DIPLOMATIC NEGOTIATIONS.

The report for 1897 contains considerable reference to diplomatic negotiations and expert investigation into seal life, embracing the text of the findings of the fur-seal experts who held a conference in Washington during that year, looking to possible revision of the Paris Regulations.

The principal correspondence between the Premier of Canada and the United States negotiator, Mr. Foster, leading up to a basis for an International Joint High Commission, for the adjustment of questions pending between Canada and the United States, was also published.

The Minister of Marine and Fisheries having, on behalf of Her Majesty's Government agreed in May last at Washington to a protocol for a reference to such Joint High Commission of outstanding differences between Canada and the United States, the Behring Sea seal question was referred to that tribunal by such protocol as follows :—

"First.—The questions in respect to the fur-seals in Behring Sea and the waters of the North Pacific Ocean."

The Joint High Commission formally opened at Quebec on the 23rd August, 1898, and after many sittings there and at Washington, adjourned on the 20th February, 1899, to reassemble at Quebec on the 2nd August next.

As the Behring Sea question is one of those receiving the consideration of the Joint High Commission, it has passed, for the time being, out of the ordinary channel of correspondence between the different Governments, hence the past year has been marked by an absence of proposals and arrangements hitherto obtaining each season in the prosecution of the sealing industry and the application of the legislation under which it is conducted.

By the terms of the Paris Award, the regulations for the government of the seal fishery in Behring Sea and the North Pacific Ocean, were to be subjected to a new examination every five years, so as to enable both interested Governments to consider whether, in the light of the past experience, there was occasion for any modification thereof.

The representations made to the Canadian Government by those engaged in the sealing industry in British Columbia, were to the effect that no modifications of these regulations should be agreed to in the nature of further limitations to the business, but that, on the contrary, the successful prosecution of the industry demanded that the existing restrictions should be curtailed alike as to the close season and as to the protective zone around the Pribylov Islands.

As the United States Government would not entertain any proposals in either of these directions, and it did not seem to the Canadian Government possible for them, having due regard to the interests of those engaged in the sealing industry, to consent to any further limitations upon the operations of the sealers, it was found impossible to agree upon any change in the Paris Award regulations.

THE BEHRING SEA CLAIMS COMMISSION.

The awards of this commission, in respect of Canadian sealing schooners seized and otherwise interfered with, and of persons damnified through personal arrest and imprisonment by the United States authorities prior to the findings of the Paris Arbitration, were published in detail in last year's report.

The total award, $473,151.26 was paid over to Canada, and, after much research and inquiry, was divided on an equitable basis between the parties entitled thereto as owners, masters, hunters, &c., in the case of some 23 vessels, and between the 14 participants in the personal claims for detention and imprisonment. One hundred and sixteen cheques have already been issued and placed in the hands of the Collector of Customs at Victoria for delivery to the parties entitled to receive the amounts allotted them.

Owing to the great lapse of time between the seizures, which began in 1886, and the final adjustment of the claims in 1898, it is obvious that difficulties were to be expected in reaching everybody entitled to participate in the recompense. Some few claimants have been lost sight of, and others have died, and their heirs not yet been found. There are, therefore, some isolated cases in which cheques have not yet issued, while in one or two other instances further information is to be obtained before final payment is made to claimants.

A sum of between $14,000 and $15,000, allotted to Indian hunters on board the seized sealing schooners is yet undistributed, as the major portion of the sum is payable to such of the west coast Indians as were engaged as hunters on board the vessels seized as far back as 1886, 1887 and 1889. All possible information is being collected on the subject, and it is expected that the department will be in a position to distribute this portion of the award at an early date.

The co-operation of the Indian Department has been obtained, with a view to facilitate this end.

RUSSIAN AWARD—SEIZURE OF "WILLIE M'GOWAN" AND "ARIEL."

In the report for 1897, page 365, it is explained that the Russian Government had made an offer of $40,078.75 as compensation for the seizure, in 1892, of the two abovementioned sealing schooners in the North Pacific Ocean.

This offer was accepted by both Her Majesty's Government and that of Canada, and the money was paid over for distribution.

On examination of the details of the Russian offer, it was found that the amount was divided between the two vessels as follows:—

"Willie McGowan"	$20,642 16
"Ariel"	19,436 59
Total	$40,078 75

After proper precautions had been taken to establish the persons to whom this money was payable, cheques were issued to the owners of the respective vessels for the amounts due them, thus affording a satisfactory conclusion to this claim against the Russian Government.

ARBITRATION OF SEIZURES BY RUSSIA IN 1892.

The seizure of Canadian sealing schooners by the Russian Government in 1892 is fully explained in the departmental report for that year, and the question is continued at considerable length in that for the following year (1893).

From the above, it will be observed that on the protest of Great Britain, the Russian Government submitted the question of the seizures to a special commission of its own appointment. The decision of this commission found that, with the exception of the "Willie McGowan" and the "Ariel," for which vessels compensation has been paid, as explained above, the seizures were regular and could be maintained.

Owing to conflicting statements, more especially with regard to the position of the vessels when seized, considerable diplomatic correspondence ensued, which resulted in the Russian Government finally agreeing to submit the cases of the remaining vessels to arbitration. These vessels are: "Rosie Olsen," "Carmolite," "Maria," "Vancouver Belle," "Walter P. Hall," "C. H. Tupper," boat of the "E. B. Marvin," boats of the "W. P. Sayward."

All possible information has been collected, and every means has been taken to properly and formally present these claims for arbitration.

The arbitrator chosen by the three Governments concerned was Monsieur Alphonse Rivier, President of the Institute of International Law, and Consul-General for Switzerland at Brussels, and everything was in readiness to proceed, but in September, 1898, the death of Monsieur Rivier was announced, and a resort to displomatic correspondence became again necessary, for the choice of a successor, who has been agreed upon by the Canadian Government and that of Her Majesty, in the person of Mr. Henning Matzen, Professor of Law at the University of Copenhagen.

No doubt as little delay as possible will occur in the arbitration of these claims.

Respectfully submitted.

R. N. VENNING.

Ottawa,

3 2044 093 328 573

Date Due